



Proceedings of the
First Digital Naturalism Conference
Koh Lon, Thailand 2561



THE DIGITAL NATURALISM CONFERENCE





Photo by Umeed Mistry

The Digital Naturalism Conference held its first session for 8 weeks in the year 2561. Located on Koh Lon, Thailand, it sought to bring together interaction designers, artists, field biologists, and anyone interested in finding new ways to explore the natural world. The goal was to experiment with ways of living and working together with DIY technology and wilderness environments.

It was free for participants to join and independently funded by Andrew Quitmeyer, Tasneem Khan, and additional crowdfunding.

Yannick Mazy provided the incredible facilities of the Diva Andaman to serve as our ocean makerspace.

Most imagery collected by the Documentary crew (Danielle Hoogendijk and Mark Lifana), Andy Quitmeyer, Tasneem Khan, and Umeed Mistry with additional content provided by participants such as Seamus Killdall, Hannah Perner-Wilson, Saad Chinooy, and many others. Magdalena Sorger also provided several ant photos throughout this book.

This book was put together hastily by Andrew Quitmeyer while trying to balance out finishing the conference, quitting his job, teaching classes, moving across the world, and seeing a PhD Student through her final defense. There's probably lots of mistakes and typos for which I apologize. I am happily amazed this book came out as much as it was able to anyway. I hope it entertains you and spikes your curiosity as you see the variety of fascinating projects conducted over an incredible time together.



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It is only by working together that we can collectively form new ideas and methods for exploring and understanding our world.

2018 / 2561 - The Digital Naturalism Conference



Contents

The Digital Naturalism Conference	i-i	Crab Lab The Amphibiological Society Pamela Parker and Matteo Farinella	P-30
Founders Tasneem Khan Andrew Quitmeyer	i-xvi	Biomimeticx2 Päivi Maunu and Marko Nykänen	P-38
Local Chairs	i-xvii	Tree Yabbie Michael Candy	P-40
Documentation Crew	i-xvii	Face Nature Madeline Schwartzman	P-48
Node Leaders	i-xx	8 Microfictions about Koh Lon Cherise Fong	P-56
Participants	i-xxi	Island Take-Away Glasses Mónica Rikić	P-60
Portraits of Dinosaurs Aziza "Zing" Daksla	i-xxii	Cococrafts Lydia Ang and Dennis Ang	P-64
Conference Philosophy Andrew Quitmeyer -Dinacon Co-Founder	A-4	Cyborg Coconut Glasses Tordo Sanchez	P-74
Budget	A-6	Ode to Dinacon Plusea	P-76
Frequent Questions Andrew Quitmeyer -Dinacon Co-Founder	A-8	Excerpts from Dinacon Deke Weaver dekew@illinois.edu unreliablebestiary.org	P-80
Digital Naturalist Design Theory Andrew Quitmeyer (Excerpts from "Digital Naturalism: Theory and Design Guidelines")	A-12	Coconut Water Catcher Sjef van Gaalen	P-86
Technological Agency	A-14	Mobile Coconut Yarn Holder Danielle Hoogendijk	P-88
Contextual Crafting	A-15	Tidal Memories Oliver Steele	P-90
Behavioral Immersion	A-16	ART+BIO Collaborative	P-92
Open Endedness	A-17	Exhibition Carmella Verrastro Elexis Padron Ariel Simon	P-92
Creatures	A-18		
Natural Reflection Kathy Macleod	A-20		
Projects	P-25		
Coral-textured Paneling Eakapob Huangthanapan (Guide) Designer, Architect, Visualizer	P-26		

Laurie Wiesner-Phillips
Stephanie Dowdy-Nava
Vida Nava
Isla Nava
Saúl Nava

Nocturnal Garden
Touch Sensor Environmental Art Installation
Joan Marie Kelly

Sun set Clock Prototype
Rob Faludi

Tribenet
Elizabeth Bigger, Luis Fraguada, and Agosto
Mesh sensor network for battling future distopia

Cargol – Found nature objecT
Agosto

Bioluminescence Textile
Elizabeth Bigger

Recycloom
Recycled Textile Loom
Maggie Kane

Crocheteering
Hannah Perner-Wilson
+C, KOBAKANT
A tale of fishy innovation

IMMERSEA
Oya Damla, Kira deCoudres, Adam Zaretsky, Ryan Cotham
ImmerSea: Subversive Submersibles is water-adapted augmented reality (AR).

Microfeel In Nature
Sebastian Seifert

Sandcastles by Joreg
Joreg

Wave Translator
Devon Ward

DinaCrab: Hermit Behavior
Margaret Minsky and Oliver Steele

Island Caterpillar
Hannah Wolfe

Dinasound Podcast

P-96

P-98

P-100

P-106

P-108

P-112

P-116

P-130

P-140

P-144

P-146

P-152

P-156

P-158

Hibiscus - by Mari Crook



Pearl Ryder

Biobang! Podcast Andrew Quitmeyer, Tasneem Khan Featuring many real, imaginary, and musical guests	P-159	Glowing Dinaflagellate Kitty Quitmeyer and Andy Quitmeyer	P-206
DIY Science Podcast Lucy Patterson	P-160	360 Degree Camera Trap Development Daniëlle Hoogendijk	P-210
Makery Article The Thai Island and the Biopirates Cherise Fong (excerpted from a story originally published on Makery)	P-162	Procedural Naturalist Drawings Jennifer Jacobs	P-212
Huffpost Article Welcome to Inventors' Camp Tristan Copely-Smith (excerpted from a story originally published on HuffPost)	P-163	Dinaclock A time-correct view of Chalong Bay Josh Michaels - joshjet.net	P-218
Foraging Map Craig Durkin and Contributors	P-166	Sonic Lace Raune Frankjaer	P-222
plant scatter Huiying Ng (based on maps by Craig Durkin)	P-170	Ants Fabric Margaret Minsky	P-224
Digital Gastronomy Amit Zoran and Ayelet Optional Sella	P-174	Translating Nature into Art Mari Crook	P-226
Dinnercon Recipe Book Excerpts from Recipe Book and Foraging Guide Ahac, Grace, Jennifer, Huiying, Michelle, Pom	P-178	Tree Area Network (TAN) A private Network for trees and humans Ingo Randolph	P-230
Soil/earth/dirt and poop? Connections in/:out Reflections on my time at DINACON Huiying Ng (based on maps by Craig Durkin)	P-182	Costuming TAN A private Network for trees and humans Mika Satomi	P-236
Location Andrew Quitmeyer -Dinacon Founder	P-184	That Strange Sensation Dezmediah	P-242
Ecosystem Simulation Marc Huet	P-186	Robot Language Music Video Albert and Mary (Dezmediah) with help from Maggie Kane, Tasneem Khan, Mark Lifana, and Andy Quitmeyer	P-246
Palm Reading Jessica Anderson and Sebastian Monroy	P-188	Smart environments Smart environments: from natural to digital Deren Guler	P-248
Dinasynth Quartet Seamus Killdall	P-194	Wild Behavior Jonathan Gill	P-252
Pom's Performance Eco Artist Pom	P-198	Singapore Foodscapes Michelle Tan	P-256
DIY Marine Microbes	P-202	Multi Spectral Image Tests Marko Pelhan	P-257



A Kayaking (Mis)adventure
Michelle Tan
(feat Dani and Shreyasi)

Drawing from Tinbergen
Margaret Minsky

Hacking a camera to hack the jungle
Brian Huang

Technical Environments
Erik Zepka

STEAM education + PLAY
Raja Schaar, MAAE, IDSA
Assistant Professor, Product Design, Drexel University
STEAM education, PLAY, and Environmental Art: Designing a Field-based Curriculum

Interview: Dinacon Leaders
Tasneem Khan and Andy Quitmeyer Interview
Seamus Killdall

Feedback About Dinacon
Dinacon Participants and Committee

Glow
by Kathy Macleod

About the Logo

P-258

P-260

P-264

P-270

P-272

P-276

M-288

F-298

F-309



Diacamma ant - Photo by Magdalena Sorger



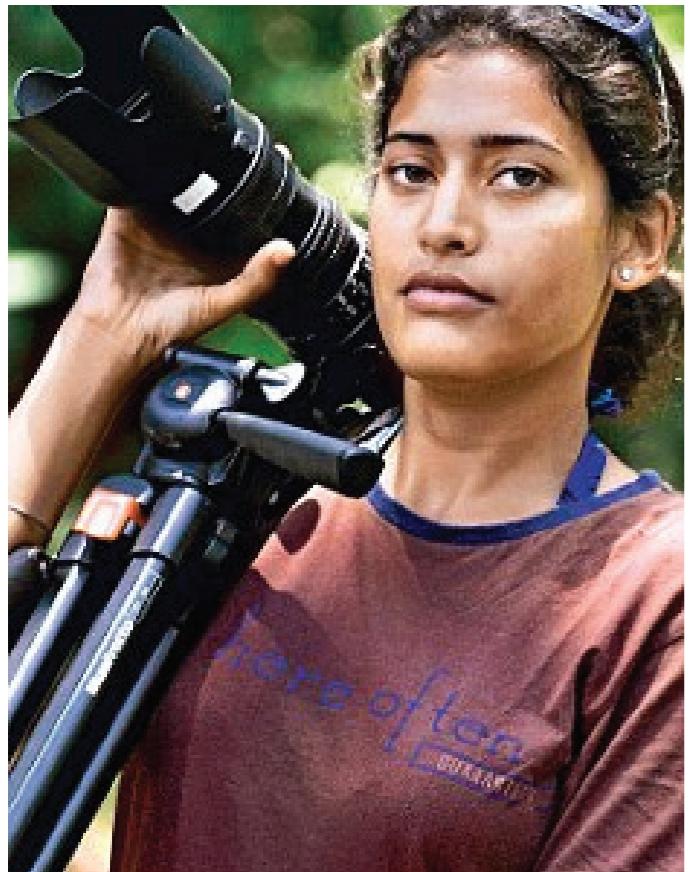
Devon Ward hunting for bacteria for microbial fuel cells



PEOPLE

Photo by Umeed Mistry

FOUNDERS



Tasneem Khan
EARTH COLAB

Tasneem has spent the last decade facilitating interdisciplinary initiatives in the fields of ecology, conservation, education and science communication. Her formal training in marine zoology and practice in the development of experiential learning pedagogies was translated into active programs during the eight years spent as director of the Andaman and Nicobar islands Environmental Team. Tasneem's photography and writing are visible across scientific and popular publications, book contributions and development of learning materials.

Beyond the scope of research and field based education, she believes that learning and working across subject boundaries is fundamental. Her participation in public speaking and leadership programs is an effort to explore these pathways.



Andrew Quitmeyer
DIGITAL NATURALISM

Dr. Andrew Quitmeyer is a hacker / adventurer studying intersections between wild animals and computational devices. His academic research in "Digital Naturalism" at the National University of Singapore blends biological fieldwork and DIY digital crafting. This work has taken him through international wildernesses where he's run workshops with diverse groups of scientists, artists, designers, and engineers. He runs "Hiking Hacks" around the world where participants build technology entirely in the wild for interacting with nature. His research also inspired a ridiculous spin-off television series he hosted for Discovery Networks called "Hacking the Wild." The Digital Naturalism Conference is his largest undertaking thus far, and is leading him to start his own permanent Art-Science Field Station Fab Lab.

LOCAL CHAIRS



Yannick Mazy - Diva Marine

Yannick is the captain of the gorgeous Diva Marine. This is a vessel he and Tasneem have been working to develop into a marine makerspace on top of its normal duties as a commercial sailing and dive ship: Lucky for us, we got Yannick to join our conference with his amazing ship.



Prasopsuk Lerdviriyapiti (Pom) - Eco Art

Pom is an eco artist from Thailand who excels in a variety of mediums such as sculptures, painting, performances, and product design with a focus on upcycled materials. On top of this she is a skilled forager with in-depth knowledge of local plants and cooking techniques.

DOCUMENTATION CREW



Daniëlle Hoogendijk

Daniëlle is an international field researcher, environmental educator, paraveterinarian, and soon-to-be tropical forester from the chilly Netherlands. Dani not only documents projects, but uses her skills as an adventurous polymath to help practitioners solve problems and fully realize their goals in wilderness contexts.



Mark Lifana

Mark Lifana is a Professional Filipino filmmaker. He has worked with different award-winning directors in Manila for many films and documentaries as a cinematographer. Mark aims to create documentaries about grassroots communities, and use those films to help elevate the lifestyle these groups.



Dinamugs- by Kathy Macleod

NODE LEADERS

The node leaders were experts from many fields invited to seed the conference with interesting projects and ideas. Because the entire conference is open and emergent, the node leaders have no official roles or responsibilities. It was an artificial hierarchy attributed to some early individuals as an experiment to see how people would organize. The only responsibility of someone assuming “node leader” status was that whatever projects they work on are open to public collaboration with all participants.

Each node leader thus was charged with finding their own ways to contribute to the overall helpful and creative atmosphere of dinacon.

Pamela Parker

Matteo Farinella

David Bowen

Maggie Kane

Kitty Quitmeyer

Michael Candy

Seamus Killdall

Hermes Huang

Adam Zaretsky

Alex Rogers

Jessica Anderson

Craig Durkin

Amit Zoran

Deke Weaver

Madeline Schwartzman

Mika Satomi

Hannah Perner-Wilson

Elizabeth Bigger

Luis Fraguada



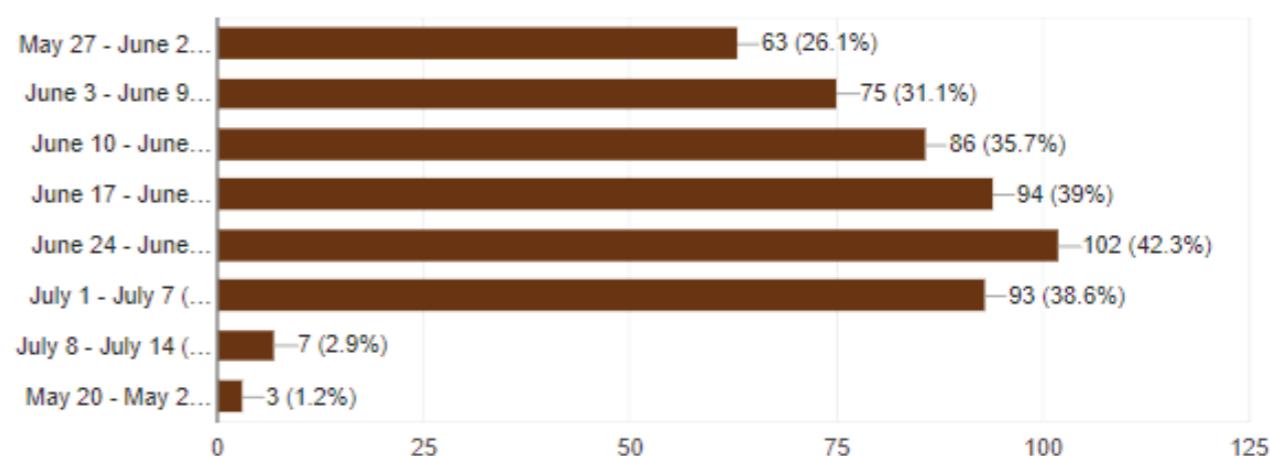
PARTICIPANTS

We accepted over 100 people from every part of the globe have been accepted to work, explore, and create together! We had freeform dates where they could join us whenever they wanted during the course of the entire conference.



Around when do you think you would come? (min 3 days, max 3 weeks)

241 responses



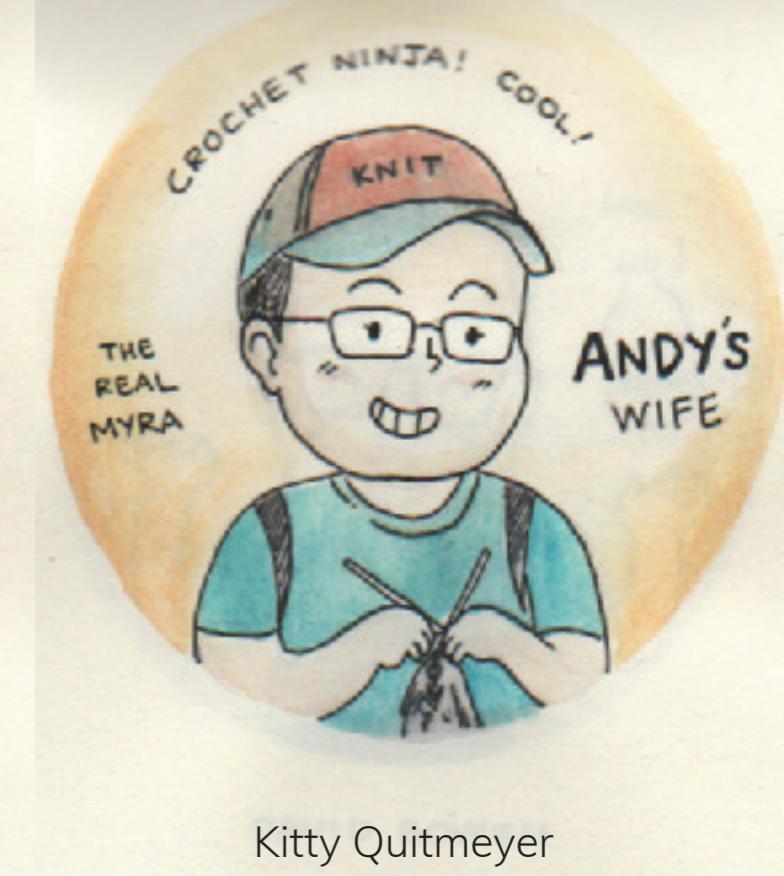
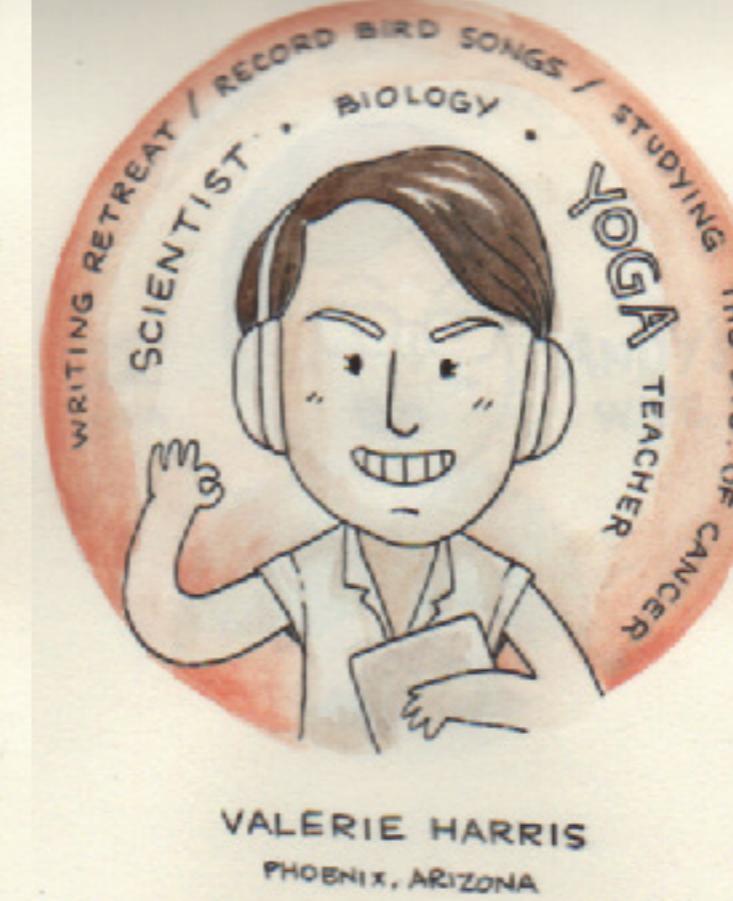
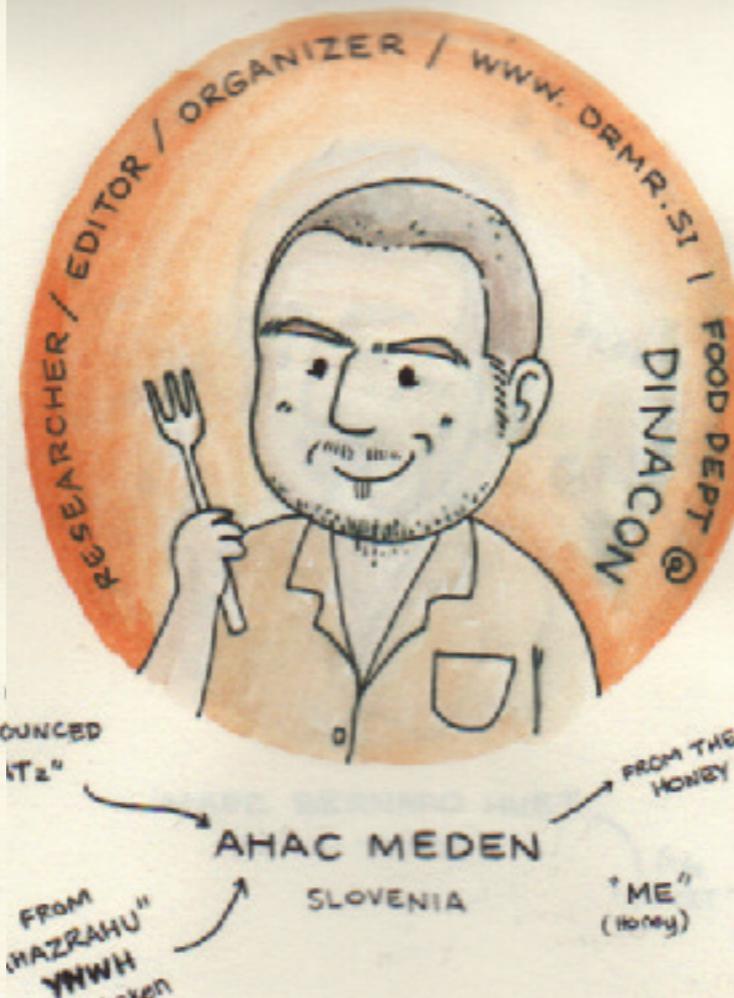
PORTRAITS OF SOME DINASAURS

Aziza "Zing" Daksla

Aziza Daksla Made a Lovely Series of portraits of different participants she worked with during her stay.







ABOUT



CONFERENCE PHILOSOPHY

Andrew Quitmeyer -Dinacon Co-Founder



David Bowen's drone visualizing plant data in the night sky. (Photo by Umeed Mistry)

Motivation

Why am I putting on this conference for free? What's my beef with current academic Conferences?

Academic Conferences have gotten kinda terrible. I like a lot of the people involved with them, and they do great work, but they get caught in a terrible, exploitative system. The whole system relies on the unpaid labor of busy academics to organize and run big logistical nightmares. The academics also have to create the content being "sold" by these conferences (the papers, and talks, and workshops, and reviews) and are then expected to pay large amounts of money for the privilege of being able to attend the things they provided all the work for.

In any other situation, people would find this totally ludicrous, but because of the system of tenure and fear instilled in academia, they go along with it anyway. These conferences also manage to hit the price point where most middle-class professors can get these expenses covered by grants, which sadly means many poorer students and professors are unable to attend.

Many academics also argue that the big sin of these conferences is how they exist primarily to fuel the hotel-industrial complex. People have to pay outrageous fees to rent out boring rooms and eat expensive food in order to stand and talk to each other. Most gigantic conference budgets get sucked up by hotel fees. On top of this, most of the output of these elitist conferences (the papers) is finally locked away behind paywalls.

On average many folks have found the full cost of going to an academic conference at about \$2500 USD. This includes the 600-1000\$ price tag for registration, \$500+ for hotels, \$1000 for transportation. Some conferences can be cheaper to go to, but many can be much more expensive!

New professors often go to at least 3 conferences a year (\$7500). I wanted to ex-

plore what would happen if instead of dropping that money on myself, I used to provide a free conference for hundreds of people?

Timing

A less philosophical problem with academic conferences, and more just logically tricky, is that most conferences are held over a very short time (like 3-5 days). This means that if you are a busy person with many potential conflicts, you might not ever be able to attend purely from circumstance (For example, I haven't been able to attend a CHI conference despite getting some proposal accepted for 4 years simply because of conflicts).

Summary of Problems to address

Exploitative – Powered by Unpaid laborers who then have to pay to attend
Expensive – only rich folks get to attend
Exclusive – generally you have to already be "vetted" with your papers to attend (not knocking Peer review! Just vetted networking)

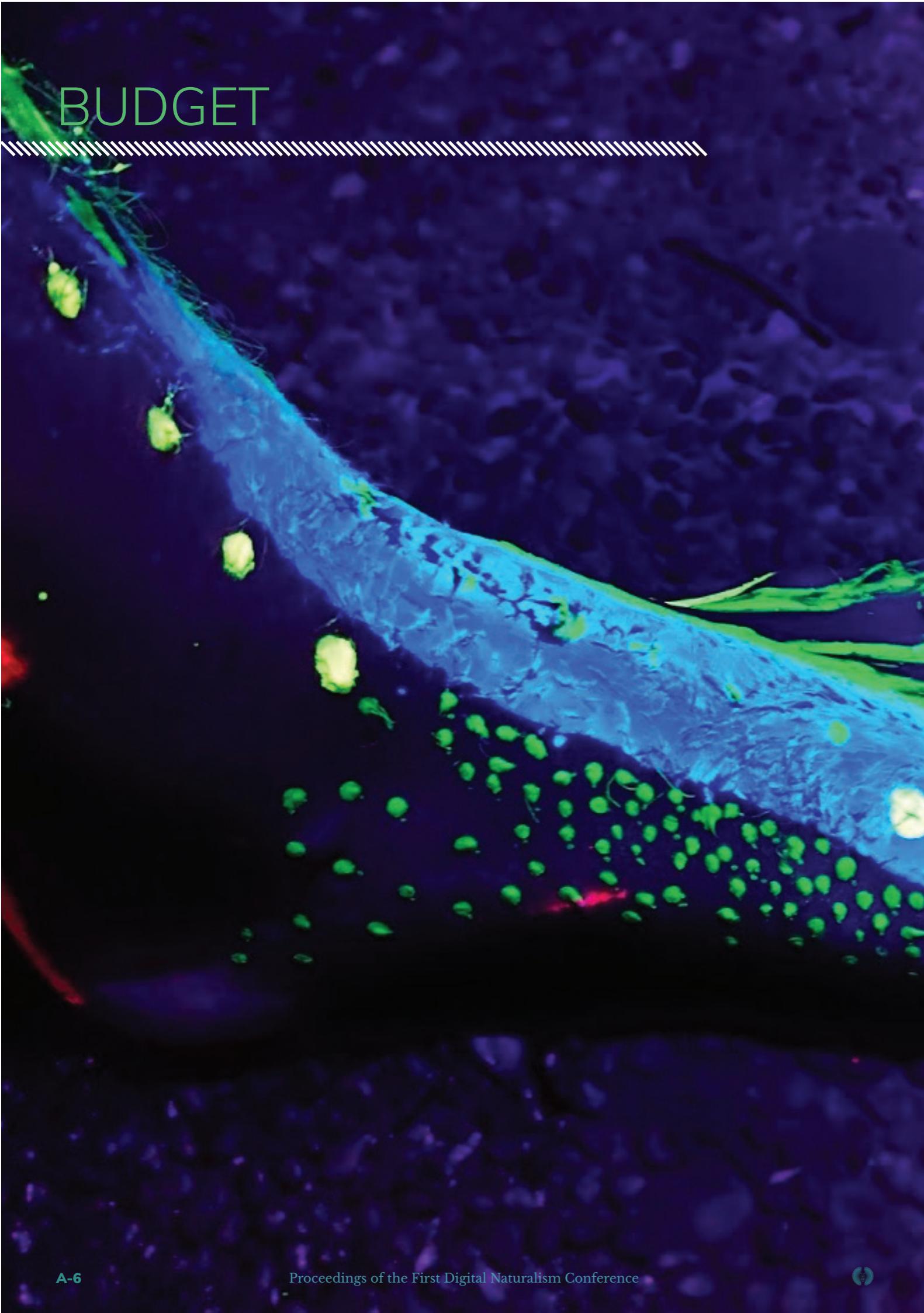
Steer Money in not great directions – e.g. lining the pockets of fancy hotels and publishing companies

Restricted Time – Most conferences leave just enough time to get bored waiting for others unenthusiastic presentations to finish, and maybe grab a drink before heading back to all the duties one has. I think for good work to be done, and proper connections to be made in research, people need time to live and work together in a relaxing, exciting environment.

Solution

I can't solve all these problems, but we can at least try to make something more interesting and accessible. We want to start luring these professors over to the side of fun, sharing, collaboration, and inexpensiveness. We want to connect people outside the walls of academia to free some of that valuable information trapped in those circles. My goal is to make a really fun and productive event that can accommodate non-academics while also incentivizing professional academics to join.

BUDGET

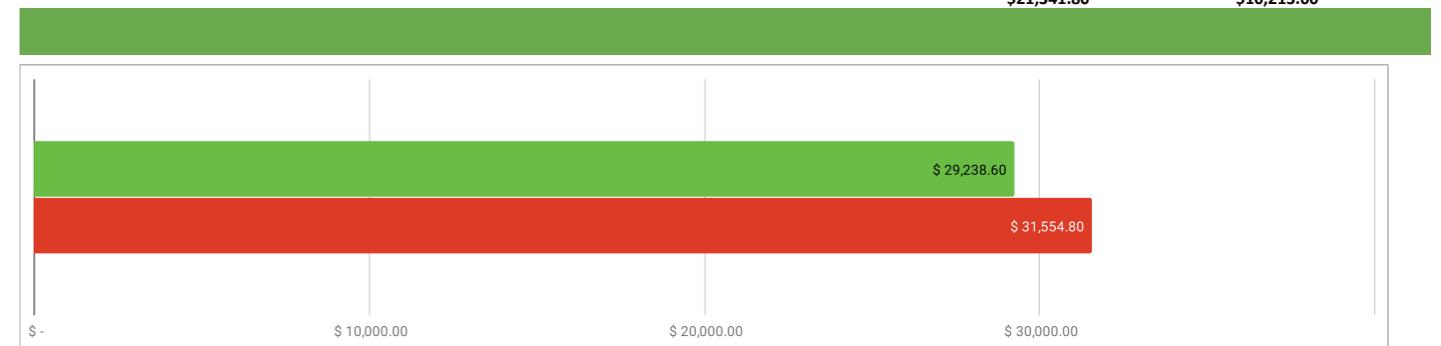


Conference Budget (USD)

STATUS

Status		
Adventure Fund (Cash from Books, Honoraria, etc...) (from Andy)	\$	3,600.00
Andy Personal Money (cash from the fact I have a real job now, yay!)	\$	5,500.00
Informal Crowdfunding (from Andy's side)	\$	2,651.00
Rental Payments from People	\$	8,287.60
From Tasneem's Indiegogo campaign	\$	9,200.00
	\$	-
	\$	-
Total Allotted Funds	\$	29,238.60
Funds Used to Date	\$	31,554.80
Funds Remaining	\$	(2,316.20)

ITEM	DATE	CATEGORY	BUDGET	COST (Paid by Andy)	Cost (Paid by Tasneem)	DIFFERENCE
Renting Site		Rent	\$6,800.00	\$7,218.89		\$ (418.89)
Site Rental Expansion (extra Bungalows)		Rent	0	4,848.77		\$ (4,848.77)
Food+food person		Materials	\$1,000.00	\$3,300.00		\$ (2,300.00)
Documentation		Labor	\$2,000.00	\$1,685.00		\$ 315.00
Water purifier (Yannick Supplied)		Rent	\$500.00	\$0.00		\$ 500.00
Solar Panels (Yannick Supplied)			\$600.00	\$0.00	\$600.00	\$ -
Diva Set up and gear					\$3,113.00	\$ (3,113.00)
Travel Stipend to help some people			\$1,000.00	\$700.00		\$ 300.00
Renting the Diva			\$5,251.00		\$5,000.00	\$ 251.00
Extra fuel for dinghies					\$1,500.00	\$ (1,500.00)
Extra Rooms people just paid for themselves		Rent		\$3,589.14		\$ (3,589.14)
						\$ -
						\$ -



What's the budget like? Where you getting all your cash!? Why do you want a small budget? Are you using grants?

Not including extra accomodations, Dinacon cost **\$23,267.80 USD**.

We put in \$11,416.80 USD and crowd-funded the rest.

Originally the whole conference was supported from Andy's own money collected from past expeditions and a 10% fee he charged himself for his own job's income. This money allowed us to rent out the location with room for about 25-30 people.

Andy wanted to use my own personal money for this project to prove that putting on a quality conference is not something that has to be super complicated requiring the blessing of large organi-

zations. He also did not want to involve my own institution with this in case they might pose restrictions on what we do or how we do it. He says, "I have a decently paying job for the first time in my life, and I am happy to be able to share this money to create something new in the world that helps people learn more about technology and nature."

From there we opened up applications, and other people tossed in money to help pay for things like a food budget, and renting out Yannick's ship, The Diva, at an extremely reduced rate.

We also steered money towards a documentarian budget and some minor stipends to help some folks make it to dimacon. Other than that, people expanded the conference by renting out their own cabins from Baan Mai.

FREQUENT QUESTIONS

Andrew Quitmeyer -Dinacon Co-Founder



MAIN RULES

What are the official “rules” of the conference?

1. You must complete something. Aim big, aim small, just figure out a task for yourself that you can commit yourself to that you can accomplish during your time at the conference. It can be any format you want: sculpture, a movie, a poem, a fingerpainting, a journal article – you just have to finish it!
2. You should document what you made and share it with our group at the conference (even if it means just sharing your article you wrote, or taking a photo of the thing). Everything will be made open-source and publicly accessible!
3. You need to provide feedback on two (2) other people’s projects.
4. You need to stay at the conference for at least two (2) consecutive nights.

Anything else?

Be nice to all humans and non-humans

Is it REALLY free?

Yes! hopefully free as in both pizza and freedom! We will cover your housing

(you might need to bring a tent), and your registration. You have to figure out how to get here.

But i heard there is a deposit?

Yes! If your application is accepted we will notify you in February and have you pay a \$20 USD deposit. We will refund your deposit when you arrive on the island! This is just to encourage people to actually come if they say they will, since there are other people on the waiting list.

ACCOMODATIONS

Do I need to pack in all my own food?

Probably not! You can if you want! But there are frequent trips to the mainland, and we can stock up on food. There's even a little restaurant at Baan Mai resorts.

Will I be able to bring my own tent/hammock and camp?

Yes! and it's probably a great idea!

Is this going to be rough? Will i have to live outside in a deadly jungle the whole time?

We tried to set up our location to accommodate people of various adventurousnesses. It takes place at a tropical resort

island, and you can choose your level of outdoorsy-ness for stay: live in a fancy cottage on the beach, stay in a tent on the lawn, or go live in the deep forest for the whole time.- it's up to you!

What are the accommodations like?

They will be minimal. It will also be in the tropics which means hot, damp, full of biting things, and beautiful luxurious nature! Full description of our accommodations will be here: Location

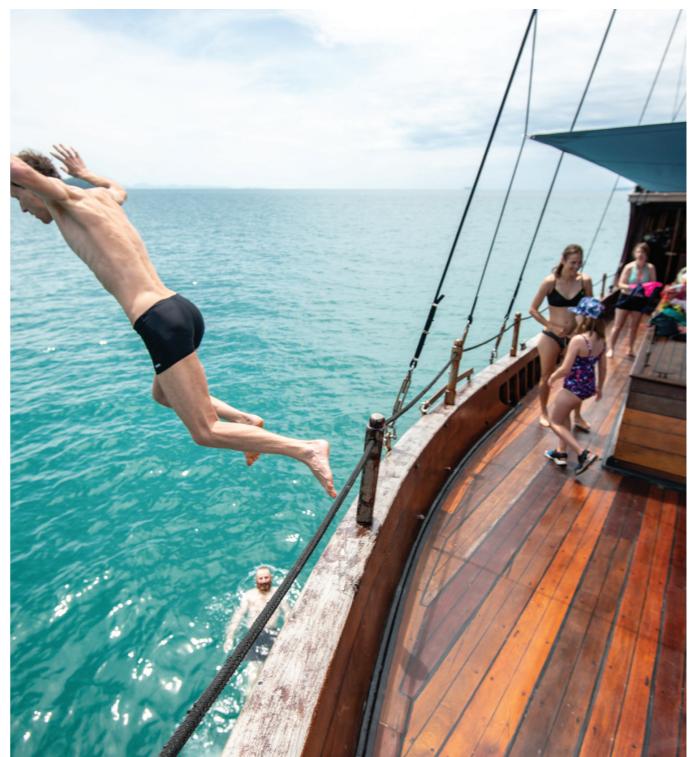
Basically we can accommodate 10 people indoors, and 20 people camping style nearby. There are 2 extra cabins that people can rent as well if we don't have enough room, or you want a private place to hang out! They aren't too expensive.

KIDS AND FAMILIES

I have a child that is super amazing and brilliant, can I send them to your conference?

Sorry, this conference is meant for autonomous individuals and groups to interact with each other. Everyone is entirely responsible for themselves, and thus we can only admit persons 18 years old and up.

I have a family that I want to come with



me (a person over 18 years old) which includes some members under 18. Can we come?

Yes! You should register your group as a team, and note that you will be ENTIRELY responsible for not only yourselves but also any individuals under 18 that are in your care (i.e. I'm sorry to say we cannot provide any babysitting services).

DOCUMENTATION

What's this rule that everything has to be open-sourced and shared?

Being good scientists and technologists, we know that all work builds off the works of others. Therefore our goal is to expand humanity's collective knowledge, and not limit it. For this reason, a key rule at our conference is that everyone's projects have to be publicly shared.

I wanted to use the conference as a writing retreat to write articles, and get them reviewed in preparation for submitting to different journals or conferences. Won't sharing my article prohibit me from publishing in these other places?

Nope, you can just share what you are working on as a "pre-publication" which is some sort of loophole that lots of these

publishers don't seem to mind!

WHAT TYPES OF PARTICIPANTS? I don't consider myself a field biologist, or an artist, or an engineer. Can I still come?

Totally of course! You can be whatever you want, no experience required, just have an interest in any aspects of these areas!

I'm a biologist, but I usually work in the laboratory, not in the field. Should I still try to come?

Totally of course! Take the cool things you know and do in the lab, and come try them out in the field with us!

I'm an artist without much experience in art or technology stuff, but i'm interested in exploring it more in the wild with you. Should I try to come?

Totally of course! We will love combining your talents with all the other interesting stuff going on!

I'm an engineer working with computers or electronics, I've never been outside, but i want to try it out with you, should I come?

(are you starting to notice a pattern) Totally of course!

I'm a jerk, and I'm real mean to people, and I don't care about the environment, should I try to come?

-uhhhhhgg i guess probably not?

MISC

Even though you are funding it with your own money, and trying really hard to provide a free, accessible space for all kinds of people, are some folks still going to get angry at you about different aspects of the conference.

Yep! Probably!

Won't this conference involve people flying from all over the world, leading to the release of lots of greenhouse gases and increasing the toll on our earth?

Yeah. Unfortunately so like most other international conferences of academics. The longevity of the conference aims to help keep folks in place longer than most conferences though (where people zip in and out for a couple days). The eventual goal of this conference is to hopefully spawn lots of "Digital Naturalism" conferences in a similar style around the world, where people can rent out some land, and invite people to live and work on it in a more localized fashion.

And that's it! This ensures that everyone going to the conference comes away with a finished project in hand, that has been reviewed by amazing experts you got to co-habitate with.



DIGITAL NATURALIST DESIGN THEORY

Andrew Quitmeyer

(Excerpts from "Digital Naturalism: Theory and Design Guidelines")



Scenes from a Jungle Lab in Madagascar. These outdoor workshops set the stage for dinacon.

Digital Naturalism investigates the role that digital media can play for biological field work. It looks to uphold the naturalistic values of wilderness exploration, while investigating the new abilities offered by digital technology.

Collaborations are growing between biologists, designers, engineers, and artists. This work provides a framework to facilitate all these participants in building and analyzing their own devices for exploring and sharing nature.

Both scientists and digital designers may benefit from the theory and its resulting design guidelines presented with illustrated examples. Hopefully more will be inspired to push digital media out of the lab and into the wild.

These design guidelines were never

imposed on any participants at dinacon. Rather these concepts were built into the infrastructure and planning of the event. This served as an experiment to see if these types of digital naturalist design methods could be fostered from within.

These basic guidelines urge designers and scientists to:

- make tools understandable and manipulable,
- build these tools within nature,
- viscerally engage human and non-human participants,
- and design improvisational tools that raise questions.

The first two concepts of agency and context guide how to **make the tools**, and the second two concerning immersion and discovery describe the key **functions of the instruments**.



Technological Agency



Contextual Crafting



Behavioral Immersion



Open-endedness

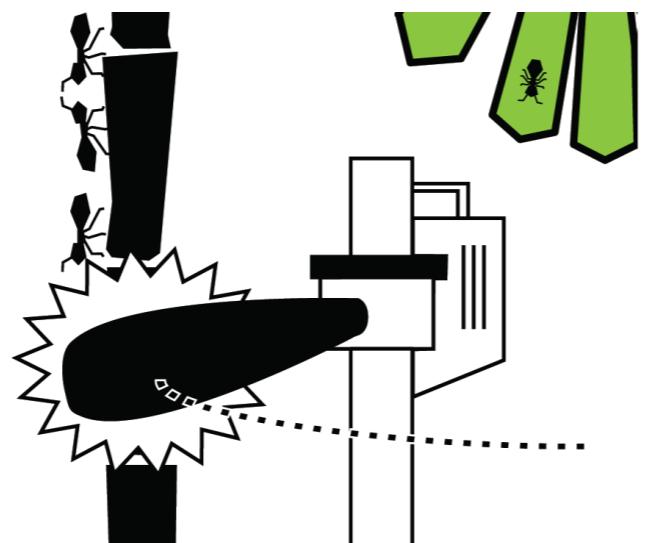


TECHNOLOGICAL AGENCY

Designing for Technological Agency means to create tools that are open, understandable, and manipulable. Giving naturalists agency over their instruments is essential to the integrity of their work. It ensures scientists' experiments are driven by their research questions and helps eliminate erroneous assumptions involved with their tech. This is especially important in digital tools, where functionality can be locked-away in machine code. The ideal digital naturalist is a fully independent explorer of both biological and technological worlds. In collaborations, though, some techniques can help all parties have agency over their tools. Aim for simple, modular tools that let one manipulate the code without reprogramming. Always encourage documentation and sharing of designs.



Ant researcher, Marting, iteratively develops and programs his own digital tools for testing ant aggression.



Technological Agency

Making Tools Oneself

Simple, Modular tools

Creating Manipulable Tools

Encourage Design Documentation

CONTEXTUAL CRAFTING



Designing, building, testing and repairing digital tools in the wilderness promotes rapid iterations and insights.



Contextual Crafting encourages researchers to physically create devices as close to the target environment as possible. Ethologists study animals in the wild because their behaviors evolved to fit the idiosyncrasies of the environment. Tools similarly incorporate assumptions about the environments in which they were made. This concept conserves a naturalist's precious time spent in the field, while enabling field-repairability and fostering inspirations in design from the nearby environment. Building tools in the wild ensures their field-readiness and suitability for the research site and animals. Building in proximity to the field and incorporating natural materials fosters the idea of "making as exploring" which speeds iterations and inspires design insights from the field.

Contextual Crafting

Shrink gap between Studio + Field Site

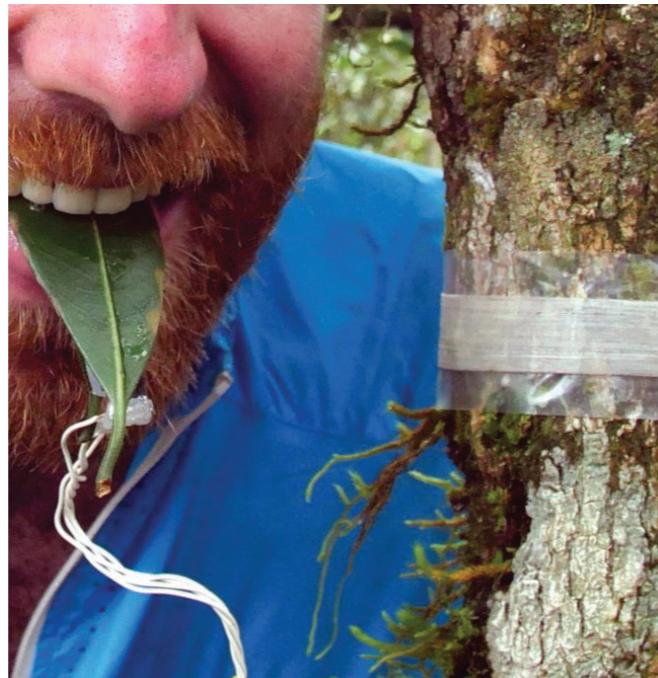
Building in the wild

Iterative Prototyping

Incorporate Natural Materials



BEHAVIORAL IMMERSION



One of the functions of digital ethological tools should be to immerse the researchers in the behaviors of an organism or the environment. A scientist's early exploration is heavily dependent on immersing oneself in the overload of multifaceted stimuli of the environment and their animal's behavior. Behavioral Immersion augments ethologists' interpretive abilities by allowing them to deeply engage this data with their whole bodies. One can cultivate immersion by remapping one's own sensory modalities to the outputs of sensors studying animals or environments.

Prolonged stimulation of body parts (like the tongue, or back) in coherent ways taps into the brain's plasticity, and develops engagement. Similarly, cybiotic interactions can be designed between computers and animals themselves.

Behavioral Immersion

Sensory Remapping

Augmenting Environments

Cybiotic Interaction

OPEN ENDEDNESS



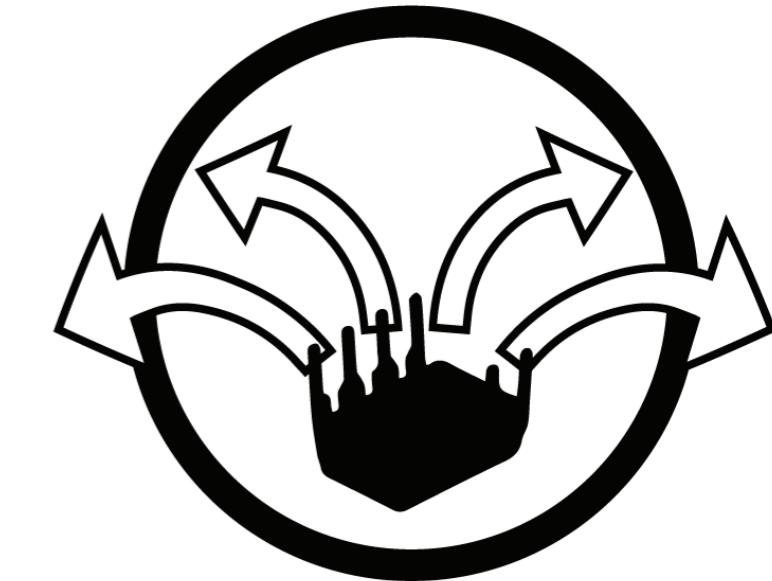
"The animals always do something different than you would think. It's about figuring out what are the bits you can build, and what are the bits you need to leave open until you can get them together with the frogs and see what works with the frog behavior?"
"What you make and what you leave open, I think that is a very important question."
-Dr. Karen Warkentin, Tree Frog Researcher

Open-Endedness

Simple Tools

Improvisational Tools

Unfinished Tools



A key task of scientific exploration is to increase chances of serendipitously stumbling across interesting new phenomena. Naturalists' tools should be designed for Open-Endedness and spur the curiosity and undirected exploration integral to their work.

Open-ended digital tools for scientific exploration can be thought to embody questions rather than only deliver answers. Tools with simple functions allow researchers to quickly re-arrange devices and poke and probe in new ways.

Making adaptable, improvisational tools spurs curiosity by encouraging the interactor to create novel combinations of behavioral stimuli. Having tools that are only partially built further encourages such open-ended questioning and discovery.

CREATURES

The island we lived on for this first Dinacon was home to incredible creatures of the land, sea, and in between. They come as large as 3-meter reticulated pythons and as small as newly hatched baby squids. Here's a quick look at just some of the fascinating living beings we got to live with.

Reticulated Python
Golden Tree Snake
Sponges
Pistol Shrimps
Horseshoe Crab
Hornbills
Wasps
Octopodes
Squids
Geckos
Monitor Lizards
Stingless Bees
Vine Snake
Annelid
Weaver Ants
Lesser False Vampire Bats
Flying Foxes
Moray Eels
and many more!



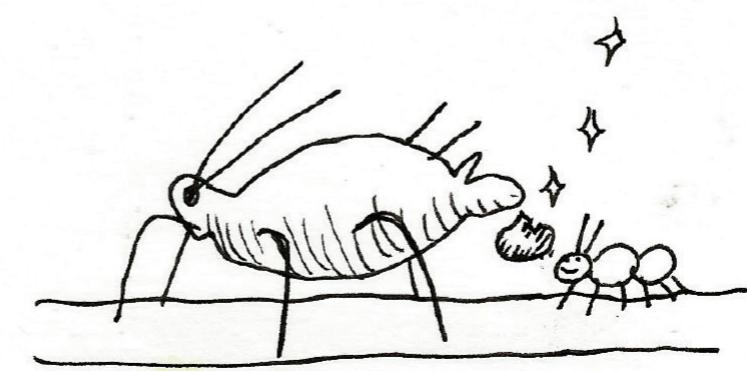
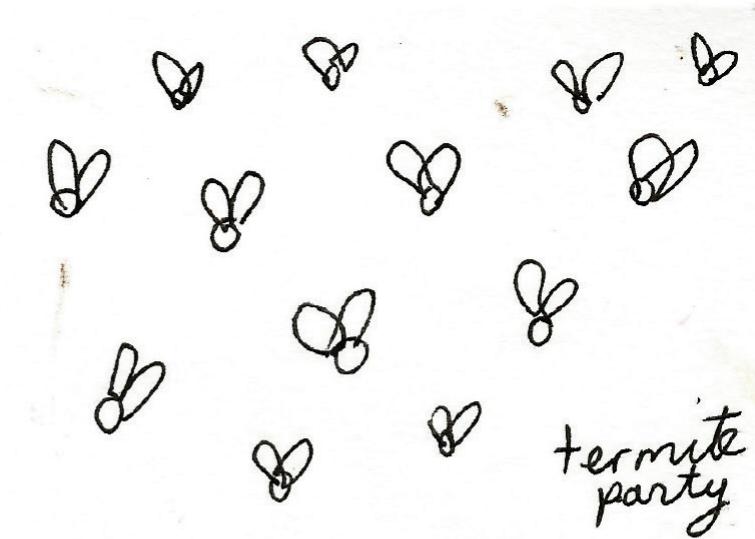
NATURAL REFLECTION

Kathy Macleod

Graphic novelist, Kathy Macleod, kept and illustrated diary of her experiences at the Digital Naturalism Conference. They are included here in segments spread throughout these proceedings

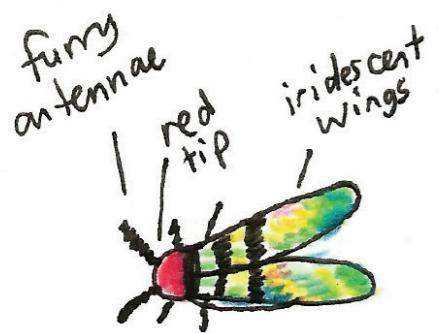


May 24
4:30 pm



learned from kitty that some aphids are farmed by ants because their poop tastes like sugar





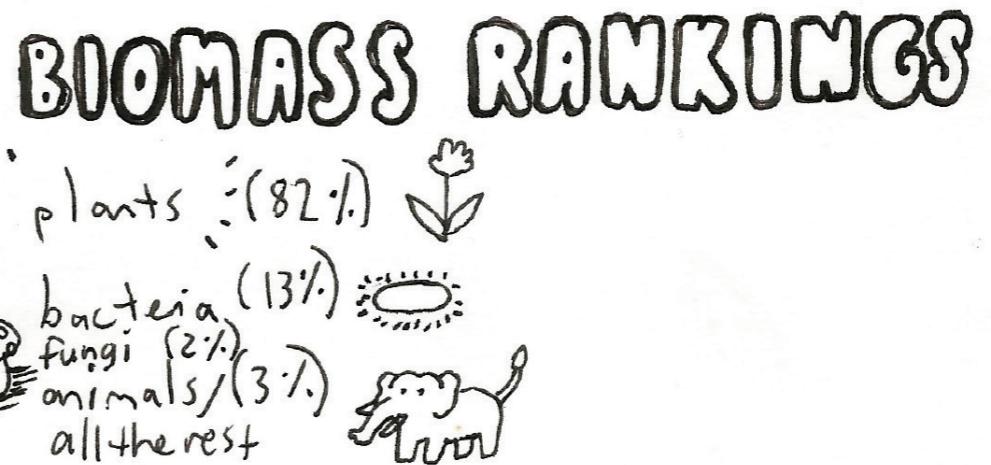
there are three cats in the house right now



they keep trying to jump on the table



Kitty told me a coconut falls from a tree at least once a day. They could kill you! Russian roulette



Everyone huddled around the biomass rankings

Back at the house



PROJECTS



Robotic Elephant by Kathleen Quitmeyer and Andrew Quitmeyer

CORAL-TEXTURED PANELING

Eakapob Huangthanapan (Guide)
Designer, Architect, Visualizer



Inspired by the modular pattern of corals, the project translates the coral textures into modules of tiles through the casting process.

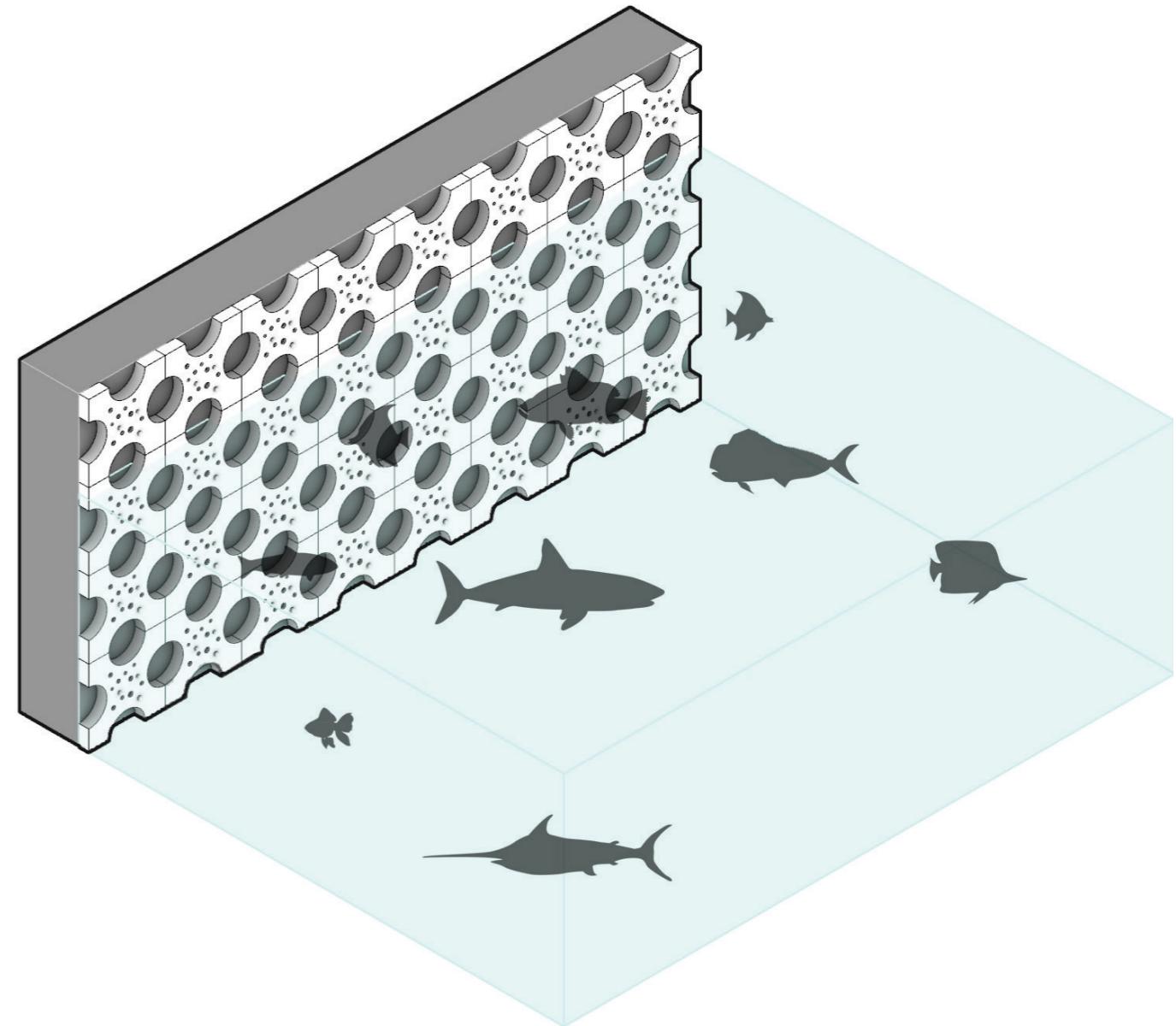
The tiles are scalable to fit different functions from a facade or fence to a seawall tiles friendly to marine lives.

The project aims to experiment with the existing natural materials and elements to create an architectural object or interventions. This could range from creating a small scale of architectural building material (eg. bricks..) from nature, or creating interesting 3D sculptural forms that derived from the geometry of the selected natural elements.

(eg. plants, leaves, flowers, coconut). The 3D objects (casted with natural materials), while itself a piece of art, could potentially have secondary functions which may create interactions with local animals.

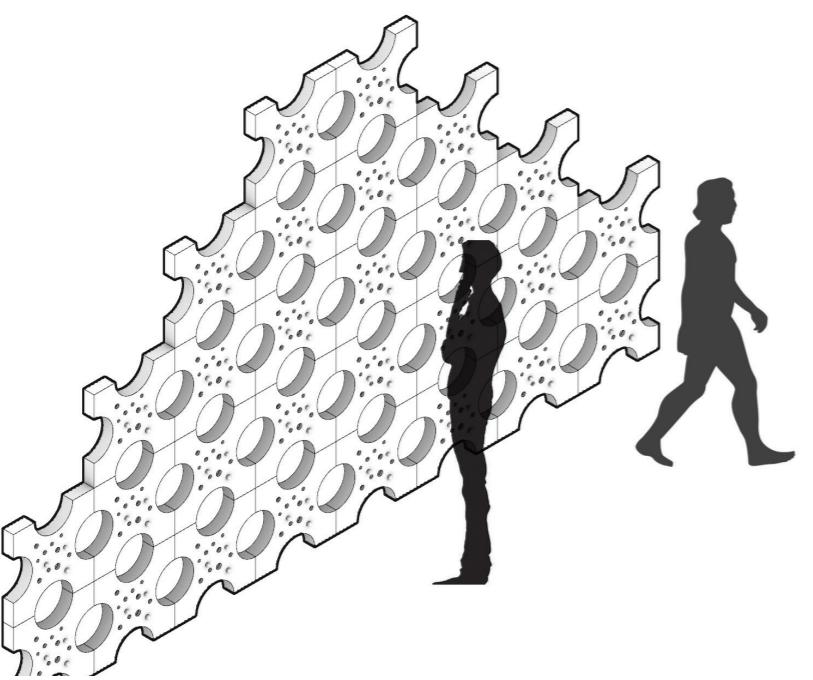
The experiment intended as both documenting research and creating art that involves technology, contextual resources as well as the local spirits.

The project involves site study to find any interesting natural elements or materials that could be used for the experiment. This could be the study of different types of soils as materials or different types of plants as base geom-





tries to create interesting 3D objects. The project could be achieved through the use of 3D modelling softwares (eg. rhino, grasshopper..), 3D printing technology (making prototypes) and hand-on crafting (molding and casting..). The end product would be the result of the holistic process that could be a piece of art, research experiment, or even functional in the built and natural environments.



CRAB LAB

The Amphibological Society
Pamela Parker and Matteo Farinella



DEPARTMENT OF
AMPHIBIOLOGICAL
RESEARCH

INTRODUCTION

Here at the Department of Amphibiological Research, our primary studies are in the equivocal interpretation of the natural world. While on Ko Lon, we used technologically aided misidentification techniques to discover a host of ambiguous new species on the island. However, we became especially fascinated with one particular animal: the hermit crab (Fig. 1).

Hermit crabs in Ko Lon are not difficult to spot: lay still on the beach for more than a couple of minutes and you will soon notice some shells crawling around you. We immediately fell in love with the little crustaceans. Maybe because, unlike most animals, they are so easy to catch and play with: delightful toy-sized robots of nature. Maybe because their mismatched shells gives each one of them a slightly goofy and unique look. Whatever the reason: we started asking ourselves some amphibiological questions: is it possible that the different shells reflect different aesthetic preferences and personalities? Or vice versa: can the chosen shell affect the crab's attitudes and behaviors? The field seemed ripe for some crab misunderstanding, but we didn't know how to tackle these important questions.

Then, early on during one of our explorations – when the sand on the beach was still undisturbed by Dinosaur tracks – we noticed the intricate imprints left behind by the hermit crabs (Fig. 2). Rambling and asymmetric, they came in so many different sizes and shapes, almost as varied as their shells. We therefore speculated that the tracks may provide a window into the personality of the crabs. To test this hypothesis, three experimental protocols were designed and performed between July 8 and July 10.



Figure 1



Figure 2



METHODS AND RESULTS

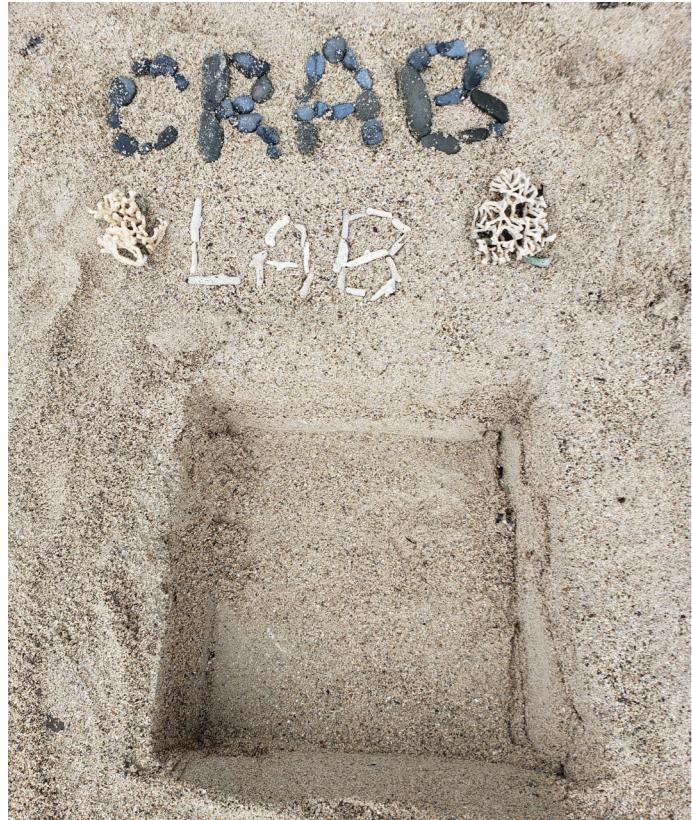


Figure 3A

1. Sand

The most obvious first step was to attempt to record the crab tracks directly on the original inspirational medium: sand. However, we needed a way to record crabs behaviour in a controlled environment, one crab at the time. We proceeded to dig a more or less rectangular arena (Fig. 3A), high enough to prevent a medium sized crab to escape (which some passersby delightfully misunderstood as a crab-fighting pit). We then proceeded to place in the arena 3 separate crabs, with notably different shells, letting them free to wander around for a couple of minutes each and took pictures of their tracks. However, this first method was not satisfying for two reasons: the most extravagant crabs emerge from their burrow toward dusk, which meant that the lighting conditions on the beach were far from ideal at the time of the experiment. Also, the crabs instead of wandering around were mostly trying to escape, slowly demolishing the walls of our arena. Soon enough we decided to fold up the Crab Lab #1.

2. Paint

Although less faithful than sand tracks, paint provides a much more durable and easy medium to record the crabs crawling. We first experimented with some blue acrylic paint, to see if the crabs were comfortable with this medium. Protected by their exoskeleton the crabs didn't seem to mind having their legs dipped in blue paint and we were extremely pleased with the results (Fig. 4A). We therefore proceeded with more elaborate experiments, completely disregarding our original plan to record each crab individually. The painting in Fig. 4B was produced by letting an indeterminate number of crabs, randomly sampled from our surroundings, wander around as long as we pleased.



Figure 4A
Proceedings of the First Digital Naturalism Conference



Figure 4B

We later got over our excitement and returned to our original goal: we collected 3 crabs (Fig. 5) with distinctive shells and let each one of them paint for a couple of minutes with a different color on sheets of papers of equal size (NOTE: each crab was arbitrarily moved around at random locations whenever the crab got fixated on a corner – more often than not). Comparing the three drawings clearly reveals very different levels of craftsmanship and artistic sensibilities.

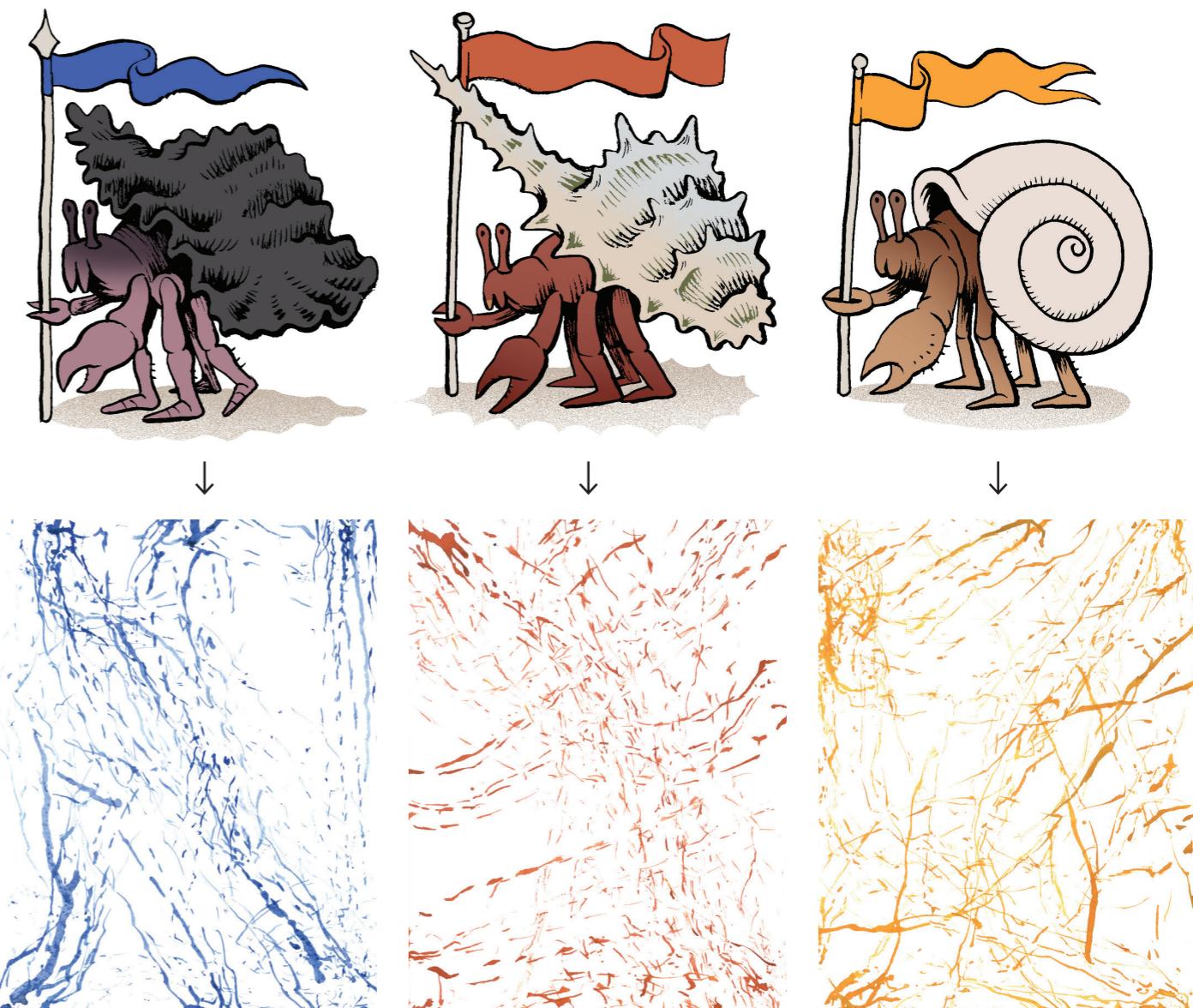


Figure 5

Crab A (blue) has a bold sensibility with rational, linear strokes. There is a sureness and sophistication to these graphic, directional lines, evoking a flowing river or receding tide.

Crab B (red)'s work takes a more tentative, thoughtful approach – its mark making has an impressionistic quality with a cross-hatched layering effect – describing dimensions of an unknowable form.

Crab C (yellow) took a more playful approach, her work recalls the graffiti like scrawls of a young Cy Twombly. The claws here have a freshness and immediacy that show great promise.

3. Light

Late on the last night of our residency after a hard day in the lab, we thought the crabs could use a little fun. We teamed up with Andy and Chris to create a final, light-based experiment. We temporarily attached colored LED lights to different crabs (Fig. 6A) and allowed them free (more or less) to chart their own courses. First in a confined environment in the house (Fig. 6B) and later completely unbounded on the beach (Fig. 6C). Of course, this technique did not allow us to record the tracks of the crabs in any detail but it had several other advantages: 1) LED lights were more durable than paint; 2) it allowed us to study crabs in the dark and we were in a hurry; 3) it looked pretty damn cool!

We actually had 6 (maybe 7?) crabs in our initial trial and unfortunately LED lights could only be set to 3-4 different wavelengths. This meant that we had crabs with completely different shells wearing the same colour, which completely confounded our results and did not allow us to unequivocally associate specific crabs with their tracks, but to be honest we didn't much care anymore.



Figure 6A

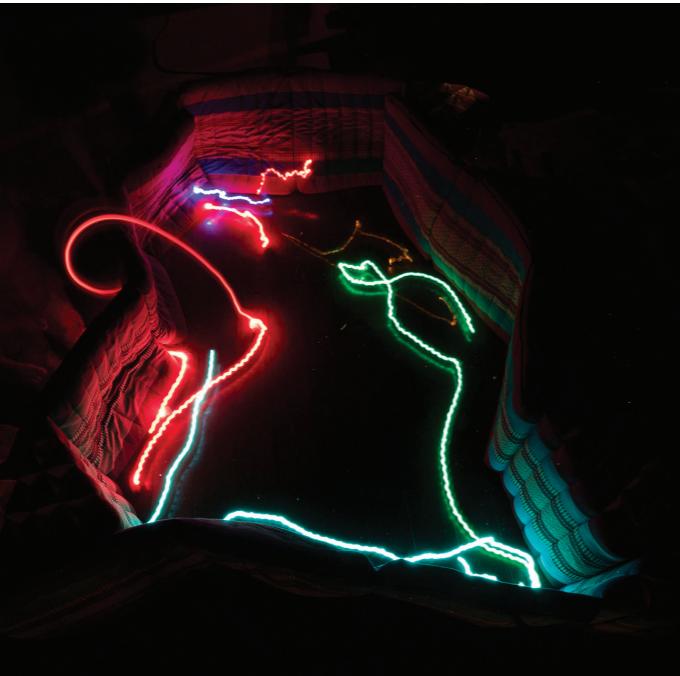


Figure 6B



Figure 6C

CONCLUSIONS

In conclusion, based on our poorly-designed and shoddily-performed experiments we can firmly reject the null hypothesis (based on pure self-confidence): hermit crabs are not just simple arthropods made more relatable to the human eye by their mismatched shells. We argue that these crustaceans exhibit unique personalities and advanced artistic sensibilities, revealed only in part by their choice of shell and crawling behaviour.

Future directions. These experiments, as well as recent reports by Minsky et al. 2018, show that there is great under-appreciated art potential in hermit crabs, and arguably in crabs of all species. Indeed, in the following weeks, while exploring other tropical beaches we came across many interesting sand markings left by other kinds of crabs. Not only do crabs produce elegant tracks when they walk but most of them burrow during the day, producing further patterns of great interest. Here are only two examples: the Ghost Crab (Fig. 7A) besides looking extremely badass, also creates these comet-like shapes around their burrow (Fig. 7B). The elusive Sand Bubbler Crab (too small for us to take a good picture), builds delicate constellations of tiny sand balls (Fig. 8).



Figure 7A



Figure 7B

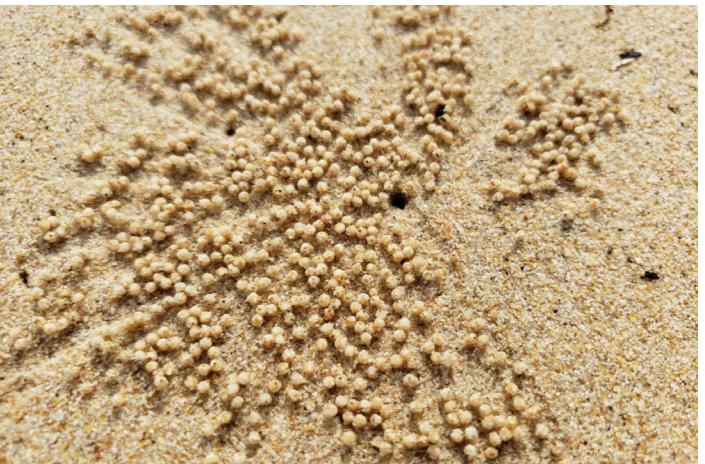


Figure 8

Finally, take a look at these crazy snails which we met on our last day in Phuket going round and round in celtic-looking tracks (Fig. 9). This will no doubt provide inspiration for many years of amphibiological studies.

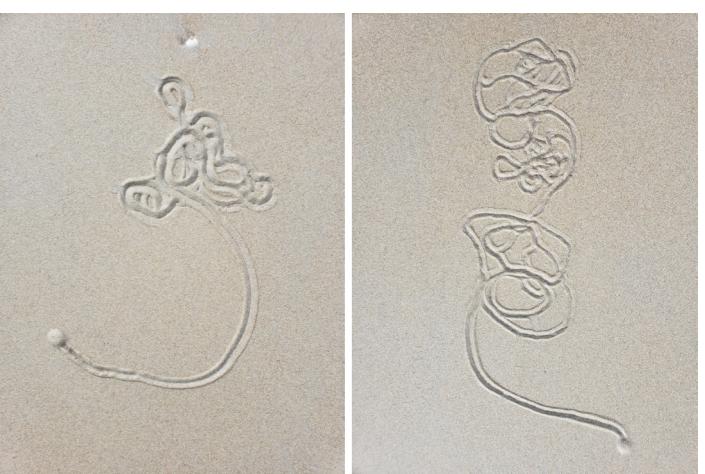


Figure 9

APPLICATIONS

Beyond their aesthetic value, there is considerable potential in crab-inspired designs and tools. As a proof of concept, our in-house designer studied the individual crab markings and processed these into a series of digital brushes (Fig. 10A) – available to download here: <https://drive.google.com/file/d/1pNjZZ8Za4NpwqyjKwd55wwjJBWI8aANN3/view>

She then used these to compose a meandering, infinitely repeating pattern (Fig. 10B). Some fabric prints have been tested and we welcome suggestions for further artistic and commercial applications.

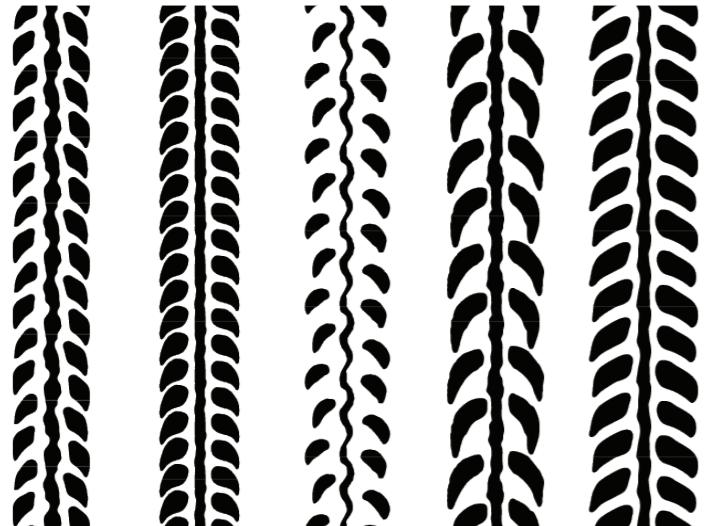
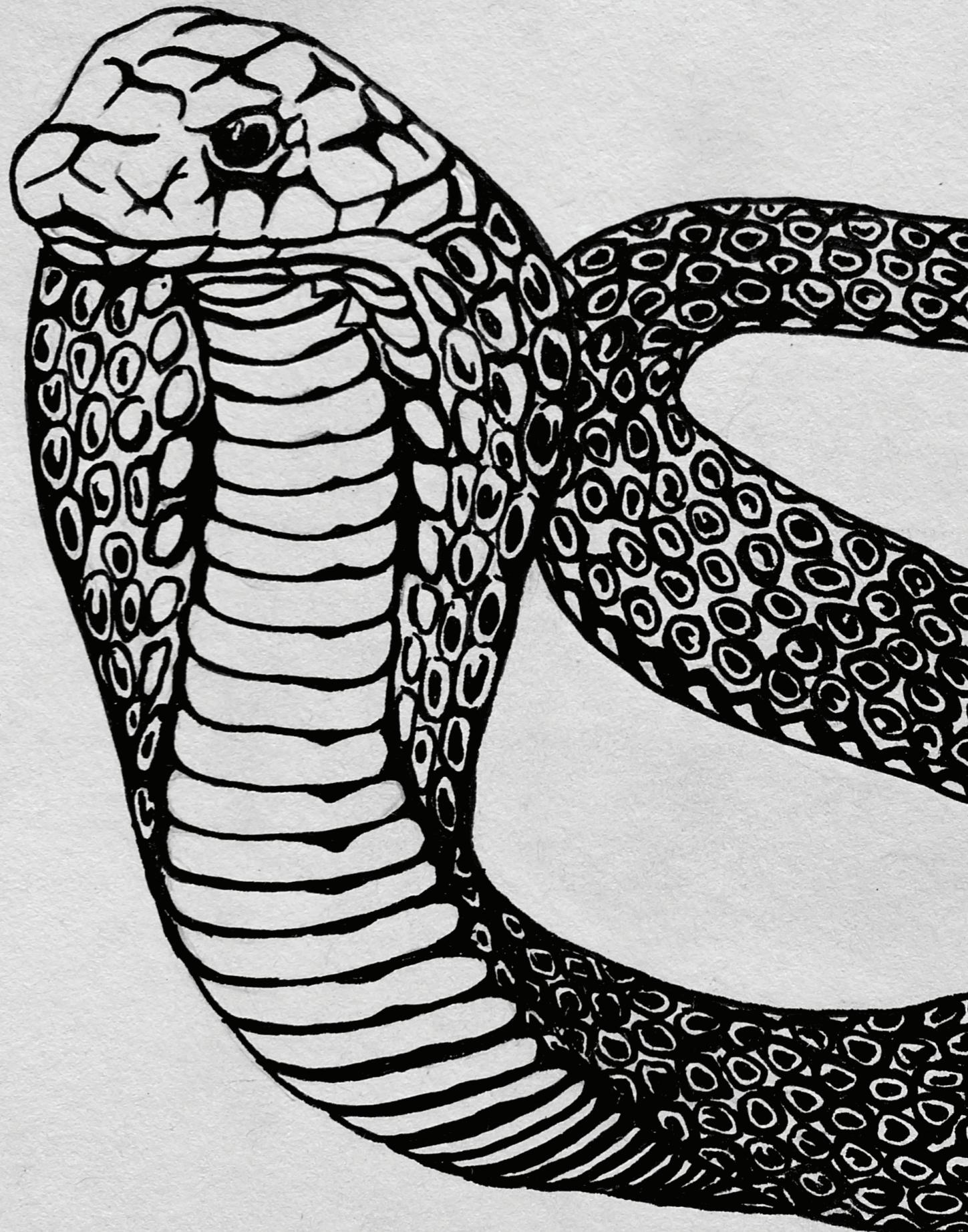


Figure 10A



Figure 10B

Cobra - by Mari Crook



FURTHER READING

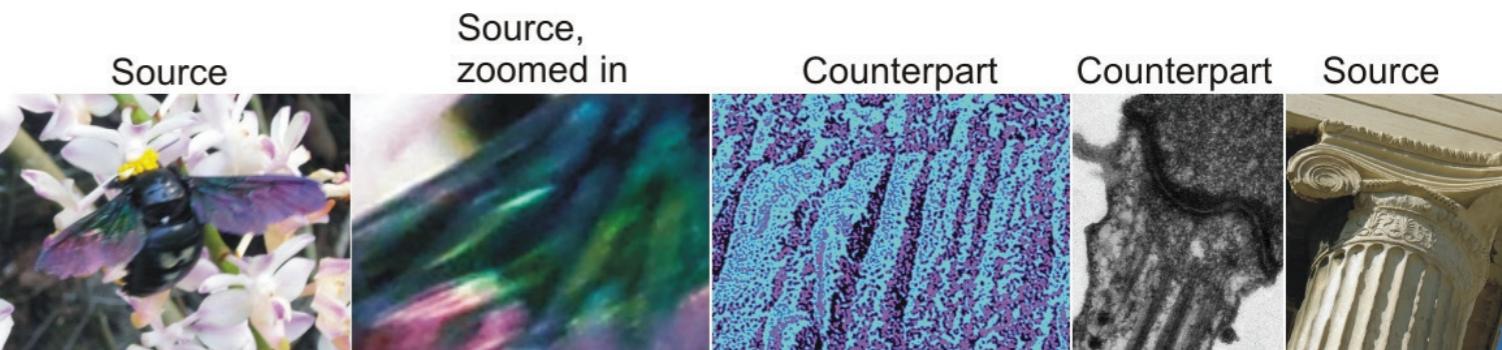
For more information on our equivocal studies on Ko Lon and beyond or to get in touch, please visit amphibiologicalresearch.com

BIOMIMETICX2

Päivi Maunu and Marko Nykänen

This project has been performed in the premises of Di-nacon (KohLon, Thailand), Harakka island and the Maj & Thor Nestling Foundation pop-up work space (Helsinki, Finland)

A biomimetic case discovered by Biomimeticx2 (Päivi Maunu and Marko Nykänen) at DiNaCon, KohLon June 2018



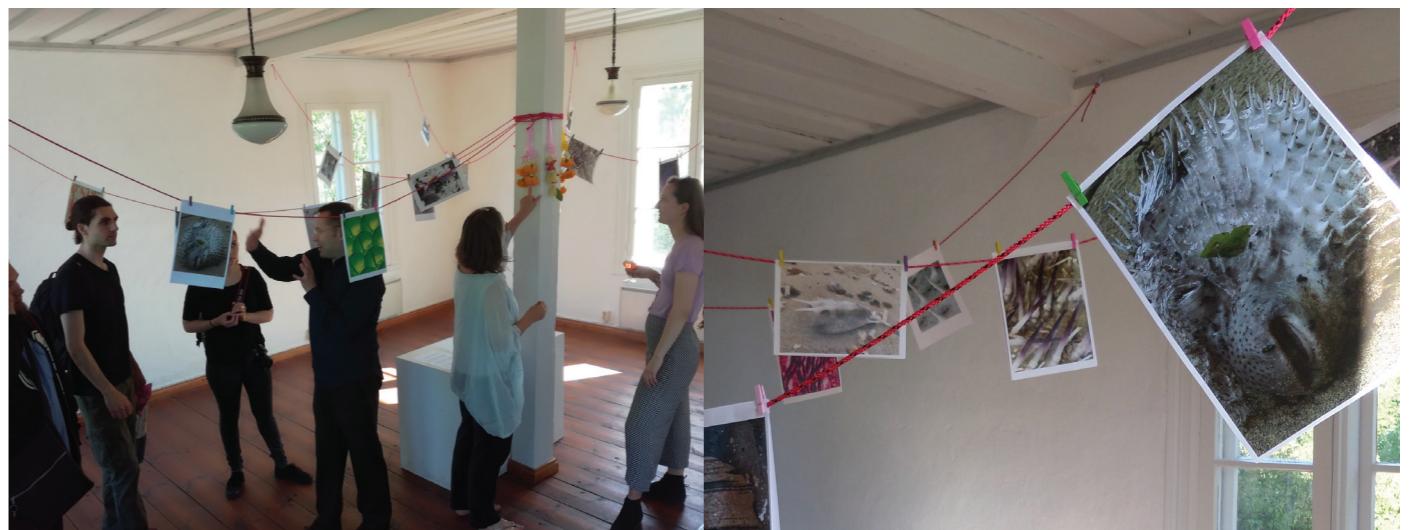
We have revealed flying tropical carpenter's bee (*Xylocopa latipes*) expressing the prominent phenotype with shiny metallic bluish green wings. The ultrastructure of the wings provide vital opportunities for the insect to persist successfully within its niche. Its ultrastructure encompasses meshwork of intercalating, longitudinally and horizontally traversing, cytoskeletal fibers. Those provide structurally and efficiently ingenious resolutions for survival in the most challenging climate and environment.

The erudite ultrastructure of the wing counterparts analogously with the ultrastructural cytoarchitecture of the brush border (i.e. terminal web) in the apical part of human airway epithelial cell, where comparable meshwork of intercalating cytoskeletal fibers occur as in the wings of *Xylocopa latipes*. On the basis of these ultrastructural cytoarchitectural specifics, we were able to comprise a biomimetic resolution where the crucial ultrastructural cytoarchitecture enables efficacious survival both for the tropical carpenter's bee and

human epithelial cell.

However, architectural establishments like the pillar of the Greek temple built by humans, have not been as efficacious persisting in natural extreme circumstances like the pillar cell in the Corti's organ of human inner ear. The cell is able to endure intense vibrational forces within the cochlea. Also the pillar cell has the homologous and analogous ultrastructural cytoarchitecture to the human epithelial brush border and cytoskeletal meshwork in the wings of *Xylocopa*. See the similar pattern of ultrastructural cytoskeletal elements in the micrographs captivated by transmission electron microscope (the counterpart images).

Human cultural evolution could not be able to cater the refined flexible and durable architecture as the natural evolution has done. Thus, the comprised biomimetic resolution provides an intriguing and encouraging option to tackle more fruitfully with the dramatic challenges associated with the global climate change, e.g. superstorms.



TREE YABBIE

Michael Candy

Michael Candy, the world's fastest robot tinkerer, created a slew of robots at Dinacon. One of his most sophisticated was the Tree Yabbie. This robot built and iterated upon in just a few quick days at dinacon is able to stick to the sides of trees and climb right up them into the canopy. It accomplishes this using a custom made undulating wire-brush drive and a re-purposed drone propeller.



INDEX

PAGE No

3 INDEX

4 FIELD TESTS

5 FINAL PROTOTYPE

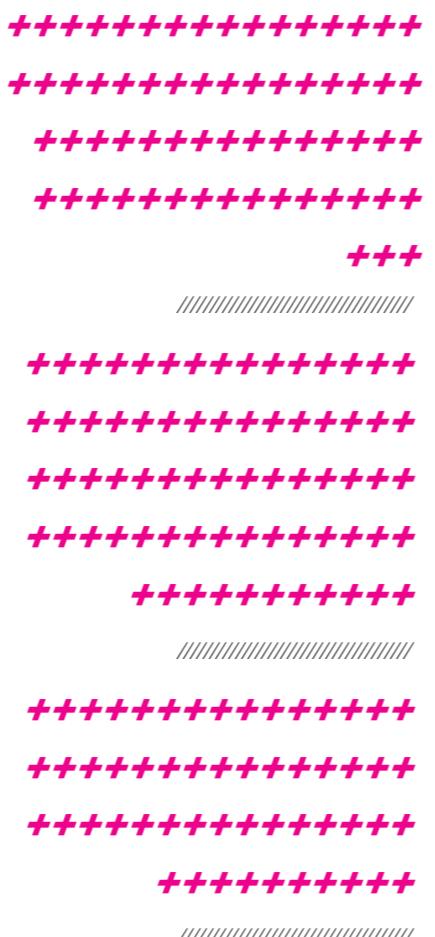
6 POTENTIAL APPLICATIONS/
FURTHER IMPROVEMENTS

7 NOTES

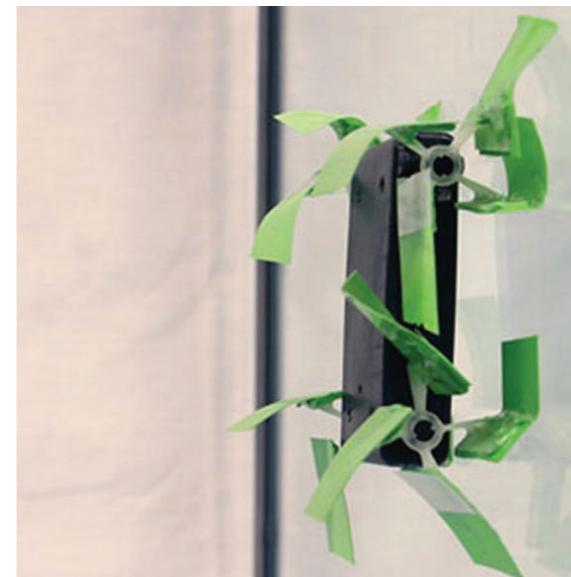
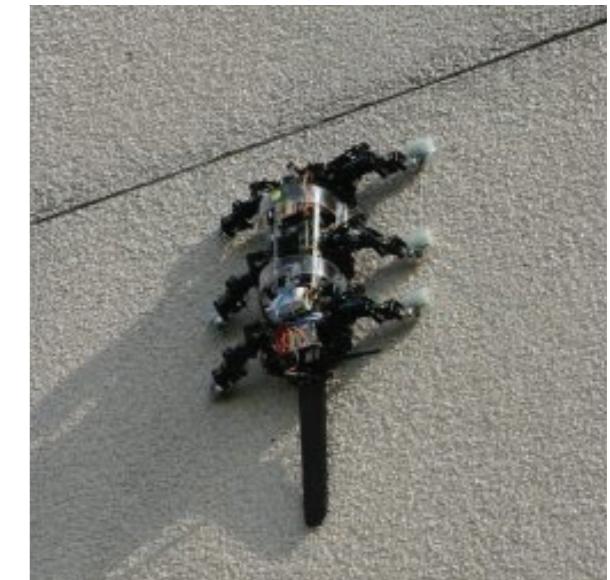
INTRODUCTION

Hello and welcome to the Tree Yabbie research manual. This guide covers the experiments and developments of a tree scaling robot tested during the Dinacon conference in July 2018.

This manual contains no science or science-y facts learnt. Just typos and crude explanations of the project at hand.



THEORY



Scaling walls with the grace and eases of jungle critters is nothing new to the dreams of robotics engineers, thus countless projects have been developed to climb vertical surfaces from using gecko like grip, magnetic wheels or vacuum/propeller power.

Due to limited time and resources, the propeller option was adopted to be the key component to keep the vehicle attached to the vertical surface.

PICTURED
Disney's VirtiGo robot
MINOAS magnetic climber
DARPA's RiSE
Some kinda tape robot thing

FIELD TESTS



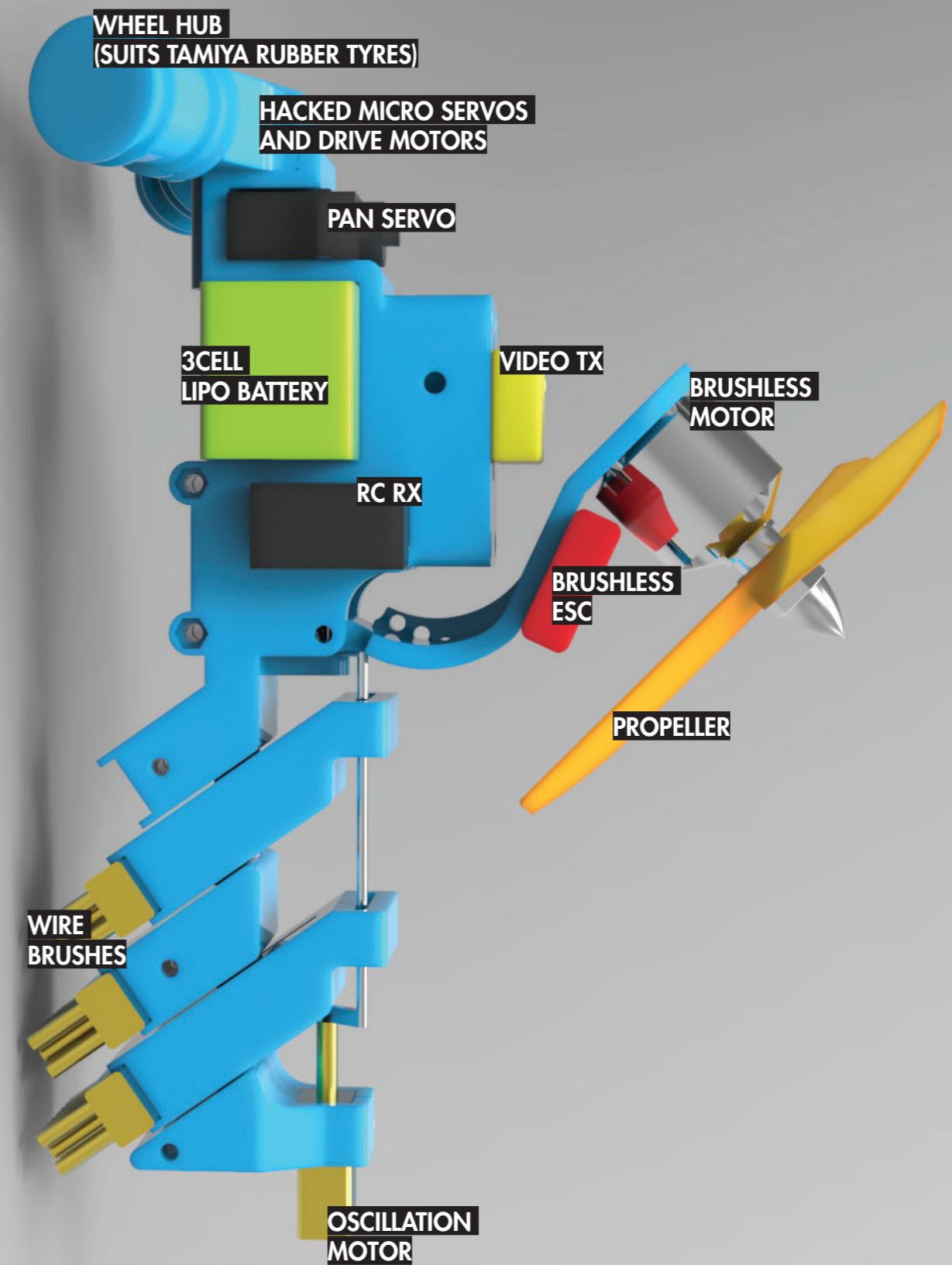
An initial test platform was fabricated to prove a brushless motor and propeller could hold a chassis against a tree. With two rotating wheels constantly running the prototype robot slowly began to scale the tree once an adjustment to the angle of thrust was made. It seemed this would constantly need to be articulated in the final version. Wire scrubbing brushes were set on an angle to further resist the robot from sliding down the tree.

The second unit design began in CAD (solidworks) and was 3d printed to house all the components and wires necessary to operate the remote vehicle. This vehicle could hold a camera able to pan left and right, variable speed control in each drive wheel for differential steering, a servo to adjust thrust angle and variable speed control on the motor. This unit was successful at holding itself against the tree, but failed to climb successfully or efficiently, this was perhaps because the unit was heavier than the initial prototype. Another cause of the problem seemed to be the wire brushes causing too much friction.

Wire brushes work well to stop the robot from sliding backwards, so instead of removing them I attempted to redesign their function as an active component. The active brushes were designed to work as intersecting blades in a linear motion, resulting in forward force as the moving brushes pressed forwards. This was hastily melted into the chassis and field tested. The result was a fully functioning tree yabbie, capable of scaling the tallest palms on the island. Final design adjustments were made and the model was reprinted before final documentation.

Tree Yabbies life came to an end after a rapid descent from a tall palm near Dinacon HQ.

FINAL PROTOTYPE



POTENTIAL APPLICATIONS

Like most modern robotics projects i could say its purpose is obscure or arbitrary - the obligatory, Search and rescue, disaster areas or the battlefield come to mind. But tree Yabbie isn't going to help you much in any of these situations, in fact it might not help you at all.

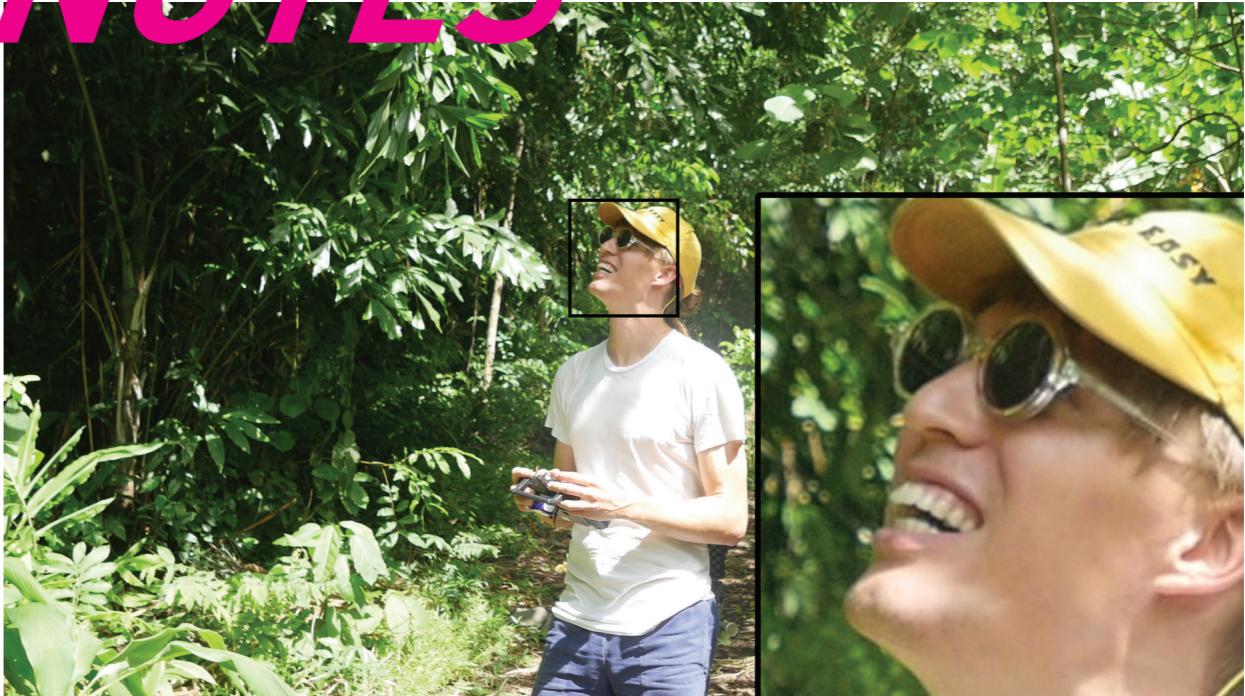
The device could easily be used to carry a tether up a tree, or with further advances attach itself to the tree mechanically at a certain point and act as a camera trap in the jungle canopy. Realistically this could be done with a drone and a pilot with enough skill to not get stuck.

FURTHER IMPROVEMENTS

Tree Yabbie was hugely inefficient, sometimes finishing its battery well before reaching the top. A ducted fan would help improve thrust efficiency, and a lighter chassis could additionally help runtime.

Another improvement might be to use some kind of mixing or PID control to increase motor thrust while climbing and decrease it when stationary. This was done manually with the prototype version.

NOTES



Thanks for reading this ill informed document. Tree Yabbie was a fun experiment, though its purpose may still elude me, the lessons learnt during this project will greatly influence my understanding when fabricating machines with hobby robotics. And i hope this document may too share some insight on the weird things you can do with crazy powerful drone motors.

LINKS

- CAD FILES AND IMAGES - <https://drive.google.com/open?id=1PKC9X52YddiqVKEZYTDijsJh3sEFMzUS>
- VIDEO 1 - <https://youtu.be/O587C0ieTME>
- VIDEO 2 - <https://youtu.be/IDvQ4NHmXeY>
- VIDEO 3 - <https://youtu.be/IDvQ4NHmXeY>



FACE NATURE

Madeline Schwartzman



Photo by Umeed Mistry



"Nature doesn't speak human." That's the first line of the curator's text I wrote for an exhibition I curated at Pratt Manhattan Gallery called See Yourself E(x)ist (December 2017 – February 2018). It's also the line that inspired Face Nature. I went on to write, "Humans, though, have ways of speaking to nature. We engineer evolution, create new tools and technologies, mimic, and refashion, not always to the mutual benefit of the planet and its inhabitants."

In planning for my visit to DINACON, I decided that I wanted to try to speak nature—to avoid the scientific interaction and instead "become" nature. Of course I already am nature. What I mean is, I did not want to look at nature—at microscopic images, or collections and cabinets of curiosity, or through scientific articles. I wanted to become one with the kind of nature that seems so strange and different from us.

I wanted to hybridize, —to become one with something on the island.

It occurred to me that so often I write about human/plant or human/animal hybrids, especially in See Yourself X: Human Futures Expanded(forthcoming in 2018). However in practice I explore nature with my feet, eyes and hands, especially through hiking and backpacking. I don't truly experience things in ways that make me one with nature, or even slightly less human.

I didn't know exactly what I would make, but I knew that I would bring 100 alligator clips, 100 pairs of wood chopsticks, three servo motors, three Ardu-

ino boards and three 6V battery packs. My goal was to make something modular that I could wear on my head, that would act as a substrate and allow me to clip different types of island nature close to my face.

I began my construction on a boat journey on the Diva, seated next to Michael Candy, a robot maker from Australia and overall genius. I borrowed Candy's dremel and drilled one simple hole through a chopstick. The entire project fell into place. Instead of the chopsticks structuralizing the alligator clips, the alligator clips and the chopsticks became mutual supports. The alligator clip allowed me to connect chopsticks together, to form a grid of alligator clips. It's a simple idea, but not the way I usually do things. More typically I wrap, glue and bang things together in defiance of order and modularity. It was the influence of sitting next to Candy that led me to fly through the assembly.

Next came the action. A few days later, Michael Candy took out his homemade portable 3D printer and did something I have not seen before. He conceived of a mount and spool for each of the three servos and printed it right then and there. To top it off, he designed the 3D printed mount to slide onto the wire of the alligator clip, something I would not have thought to do. The shock, for me, was the elegance of the connector, and how quickly he went from identifying the mounting method, to drawing it up and printing it minutes later. My hope for the alligator clips was that their movement would be "uncanny." Michael and I threaded wires through the clips and back to the servo, each in a different pattern, so that when turned on, the clips moved in every different direction.

When the first quirky beach sponges were mounted, I became a human/sponge hybrid. I was shocked to see what I looked like from the outside.

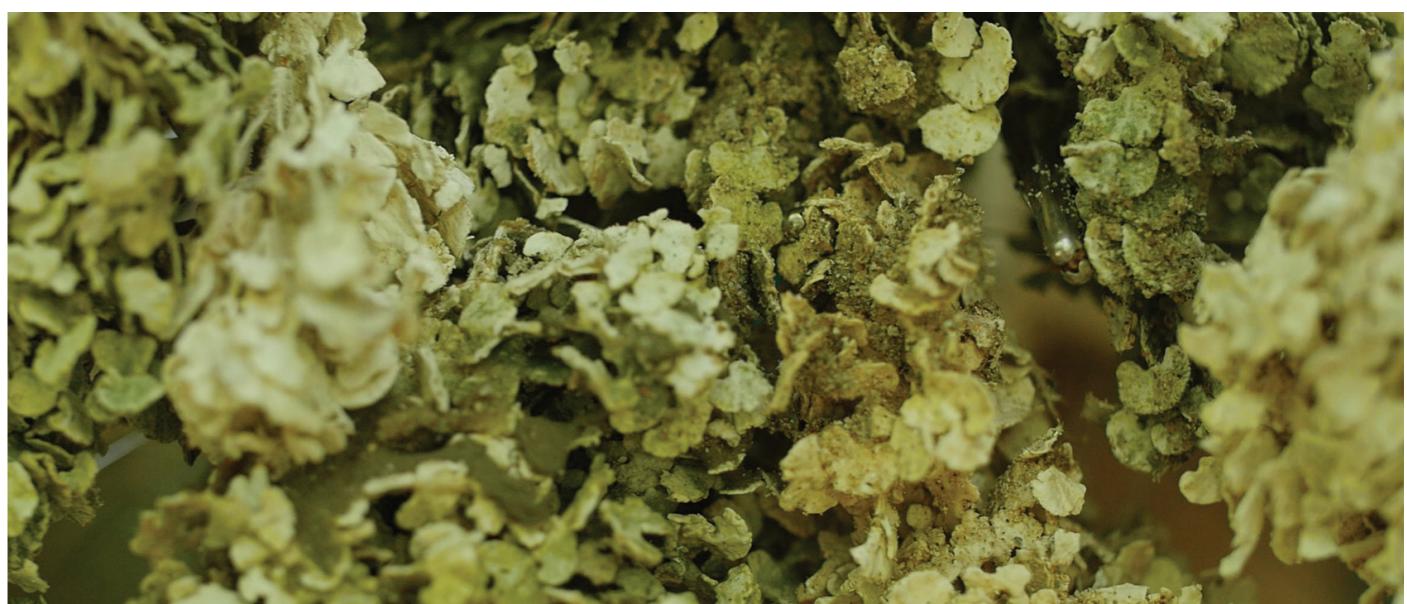
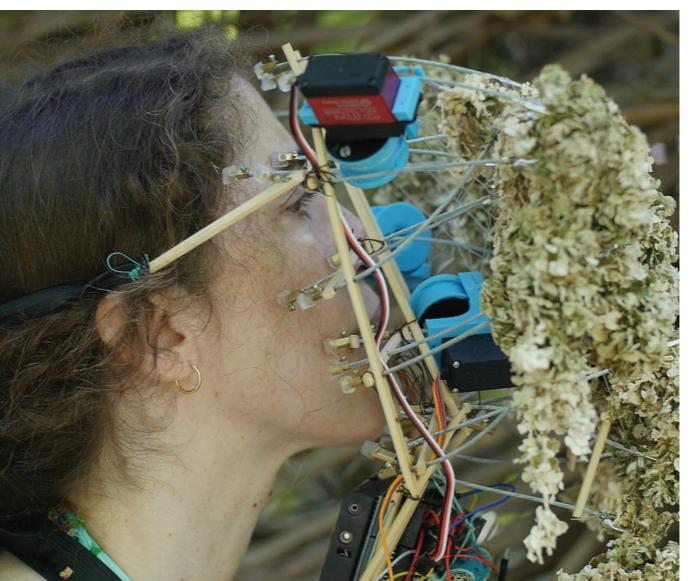
The modular system and motors replicated nonhuman movements in nature—undulations of sea creatures or the shifting vectors of the strong island wind on trees and water. The winding and unwinding of the wires made the hybridity more believable and disturbing. Because of the alligator clips, I was able to swap out the fragments of nature and completely change the sensation of the hybridity, both to outsiders and to the wearer. Halimeda, a type of algae that has a unique mineral skeleton that makes it more like a vertebrate than a plant, made me disappear into a strange flowing mass. The long pinched pods of the tamarind tree made me more branched and architectonic. Brightly colored leaves and human detritus—all manner of discarded and degraded plastic items like flipflops, spoons, and medical supplies—transformed me into monstrous hybrids. Though still visible in glimpses around the clipped on sponges and coral, my head had become a swarming set of sea creatures. From the inside it was not the hybridity that was as significant, as was the view from within nature. I was not seeing nature as remote, but as a surrounding spatial system pressed right up against my face.

Aside from Michael Candy, there were other people who gave me their knowledge and brightness. Mika Satomi and Hannah Perner-Wilson of Kobakant dismantled my battery case and instead created a dematerialized delicate crocheted battery holder using elastic thread and conductive wire. That only increased the hybridity of face nature and electronics. Andrew Quitmeyer and David Bowen helped me power the servo motors and Andy stabilized the electronic system and added more power when it became necessary. He also shot many of these wonderful pictures along with Umeed Mistry, who specializes in underwater photography.

Nature doesn't speak human, but DINACON and Face Nature helped me to speak a little nature, and some of the super-talented participants helped me to translate.

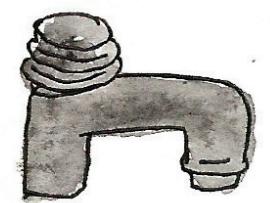


Koh Lon, Thailand, 2561



May 30
(Day 6)

We found at least six dead little frogs in and around the swimming pool!



Is it the apocalypse?

still no water!



There was a frog on the bookshelf in the house

after dinner



A frog jumped on my leg.



3 MICROFICTIONS ABOUT KOH LON

Cherise Fong

The idea was to adopt the point of view of select native organisms to sketch a subjective, fragmented portrait of the island, based on observations during my stay, using perspective, empathy and humor.

<https://www.dinacon.org/2018/06/29/3-microfictions-on-koh-lon/>



PALM

i knew it was just a matter of time. but it's important to keep up appearances, i thought. tall and slim, with my nuts at the top. once in a while, i let one drop. this is my gift to the island. anyone who dares to climb my torso and touch my private parts should know they have it coming. i wonder if the humans who drink my clear milk can taste my bitterness when they incinerate plastics and let diesel seep into the soil.

my siblings and i, beacons of baan mai. soak in the tides, survey the boats, sway with the wind, sweat with the rain. caress the air with feathered digits. and of course, blessed by the big buddha on the hilly horizon. a royal perch for the heavy hornbill. home to the golden tree snake. bejewelled by the translucent exuviae of a reborn cicada. because on the ground, we rule.

the question is, why me? neither an elder nor a sprout, just another misplaced middle child in a clan of kings. four full moons ago, it started with the beetle. she burrowed underground. i could sense her within my roots. me, tickled by her visit. she, searching for the perfect nest. because i am royalty, i thought, she chose

me. then, she disappeared. it wasn't long before i understood the curse that she had laid upon me. dozens of larvae, hatching from abandoned eggs, emerged into my entrails. hungry and blind, they ate their way through my wood. the squirming in my loins went on for days and nights, invisible to the outer world. it's important to keep up appearances, i thought. finally, the grubs disappeared on six legs.

still, i stood straight, tall and lean. yet, turmoil had grown inside me. and dare i say, other species can sense insecurity. the fungi that grew on my skin started out as friends. we exchanged nutrients; both of us grew stronger together. but once they felt the chemical change under my bark, they too began to bite. mycelium crept into my guts, into the crevices left by raw trails. they spread and settled into patches of poisonous white fur, chewing away at the walls between the tunnels. slowly but surely, i was being eaten alive. ravaged within, savaged without. night after day, from moon up to sun down. until sunday, june 24, at 13 hours 8 minutes and 53 seconds, I crashed. i can no longer keep up appearances, i thought. this is my gift to the island.



COLONY

major 5736: vertical is now horizontal. pass it on.

major 5860: forwardbound, access to roots. check.

major 5817: trunk end, tunnels rotting, mycelium present.

major 5838: scout black ant seized, quartered, dead.

major 5839: carrying to nest 4.

minor 4072: red honeydew milked from scale insects at pasture 2.

minor 4073: carrying to nest 5.

major 6825: commuting to nest 9.

major 6812: carrying major 6813 to help build new nest.

major 3693: stretching out, can't reach.

major 3694: climbing over, stretching out, can't reach.

major 3695: climbing over, linking in, stretching out, can't reach.

major 3696: climbing over, linking in, bridging up, stretching out... leaf reached.

majors 3693+3694+3695+3696: pull!

majors 3493+3494+3495+3496: pull!

majors 3711 through 3722: staple bite. hold. wait.

major 2561: carrying larva across seam. left, tap for silk. right, tap for silk. forward to next stitch, repeat.

major 9480: intruder at northwest. clamp jaw bite.

major 9488: intruder at northwest. attack stance spray.

major 7261: intruder at southeast. attack stance spray.

major 7269: intruder at southeast. clamp jaw bite.

minor 7200: intruders invading nest 1. all save the queen!

minor 7253: protect our larvae!

minor 7218: citric attack!

major 7264: no use, we're a delicacy.

major 7237: once licked, twice bitten, all minced into garlic tapenade.

major 7999: nest may be cooked, but colony will survive.

major 8000: bon appétit, humans!



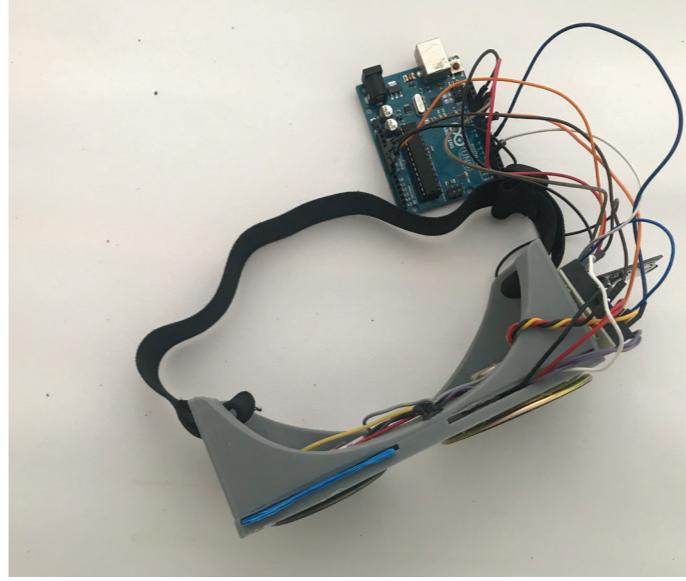
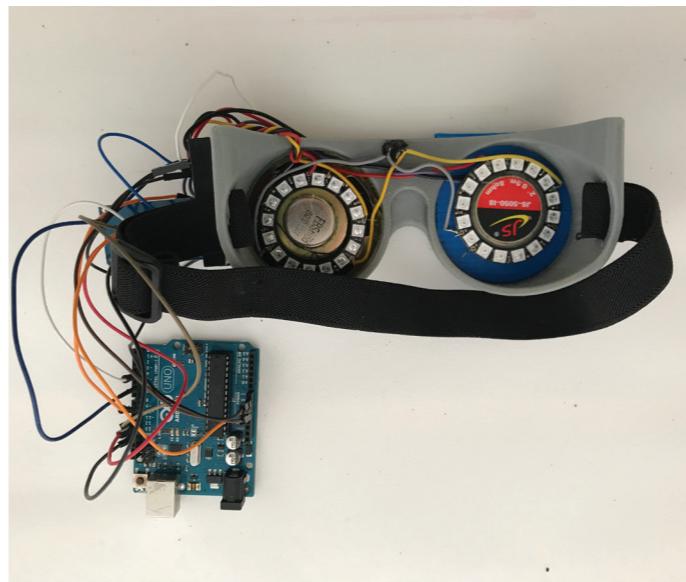
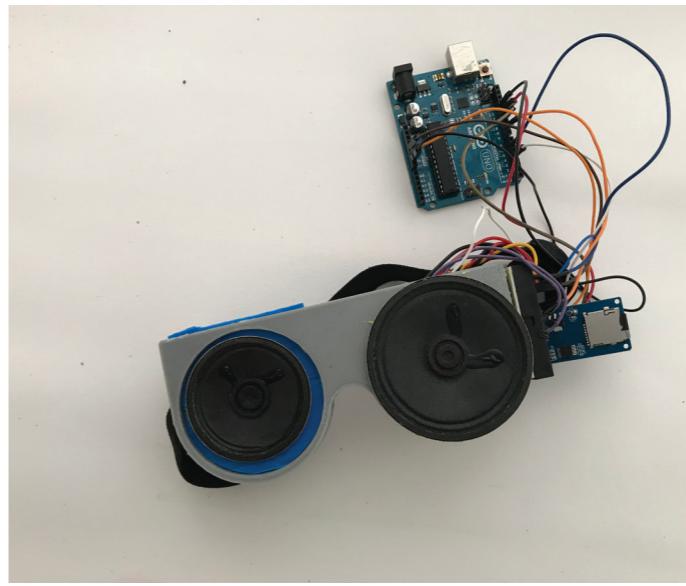
HERMIT

what are you, blind? can't you see i live here? i know my jade green shell is drop-dead gorgeous, that's why i chose it. i like the way it accents my bright red body. my old shell didn't do me justice, but at least it fit. anyway, i outgrew it last month. this jewel fits me like a gem. i've finally found the perfect shell, and it's mine. so bugger off, little crab, you're too small. better yet, wait in line with the others. your time will come if you're patient. the last time a human tried to steal my shell, i pinched so hard she tossed me back into the water on the spot. anyway, i prefer kayak rides. one can travel very far, see many more shells of all colors and stripes. in fact, on the other shore i spotted a sharp black and white shell on a snail at high tide. now that would help me stand out among my peers. not like those entire nudie beaches branded blue and red. and some crabs are so flashy they don't even need shells. just hiding all that iridescent purple blue pink yellow gaudiness underneath a rock, what a waste. besides, they're huge. if i want a break from the spotlight i'll duck into some barnacled coral. block the hole with a slug. as long as a moray eel hasn't already laid dibs, i'm safe. i mean, i'm not always looking for a fight. those sand-camouflaged cannibals are ruthless.

if one of them isn't brandishing some other crab's claw like a victory torch, it's dragging another severed torso off for dinner. i may be a scavenger, but i'm not a barbarian. sand bubblers, on the other hand, they have a sense of esthetics. those tiny critters sieve their nutrients right out of the sand at low tide, then after breakfast they leave us with a bubbly mandala on the beach. all that's really missing is color. now what would mantis shrimp see? even the little ones reflect color, algae green legs moving like a millipede under the microscope, or so i've heard. and peacock mantis shrimp, they see psychedelic rainbows. i mean, they are psychedelic rainbows. but then, color isn't everything. look at the cucumbers, then look at the urchins: same color, totally different shape. the urchins, however, have pretty blue eyes and a pulsing orange heart. not to mention long and elegant spines. but then, i can't say i spend much time with the filter feeders in the lower sublitoral. in fact, if i'm not getting run over by a stampede of slater bugs scattering across the rocks at dusk, i'm deafened by the snapping of pistol shrimp popping their prey at low tide. anyway—what's going on?! egret sees red! no, let go! put me down! my shell, my precious jade shell!

ISLAND TAKE-AWAY GLASSES

Mónica Rikić



I came with the idea of making a playful device at the island. The first 2 days I was exploring the island, walking around and recording a lot of sounds.

When I was putting my materials together – arduino, glasses, sensors, speakers – I was talking to Mika and she just put one speaker in one of the lenses and it fit perfectly, so I decided to do a sound experience device with the glasses. I like the idea of 'seeing sound' or having an object made for one sense to feel another one.

With some of the bits and pieces put together, I still felt I needed a concept to put everything together.

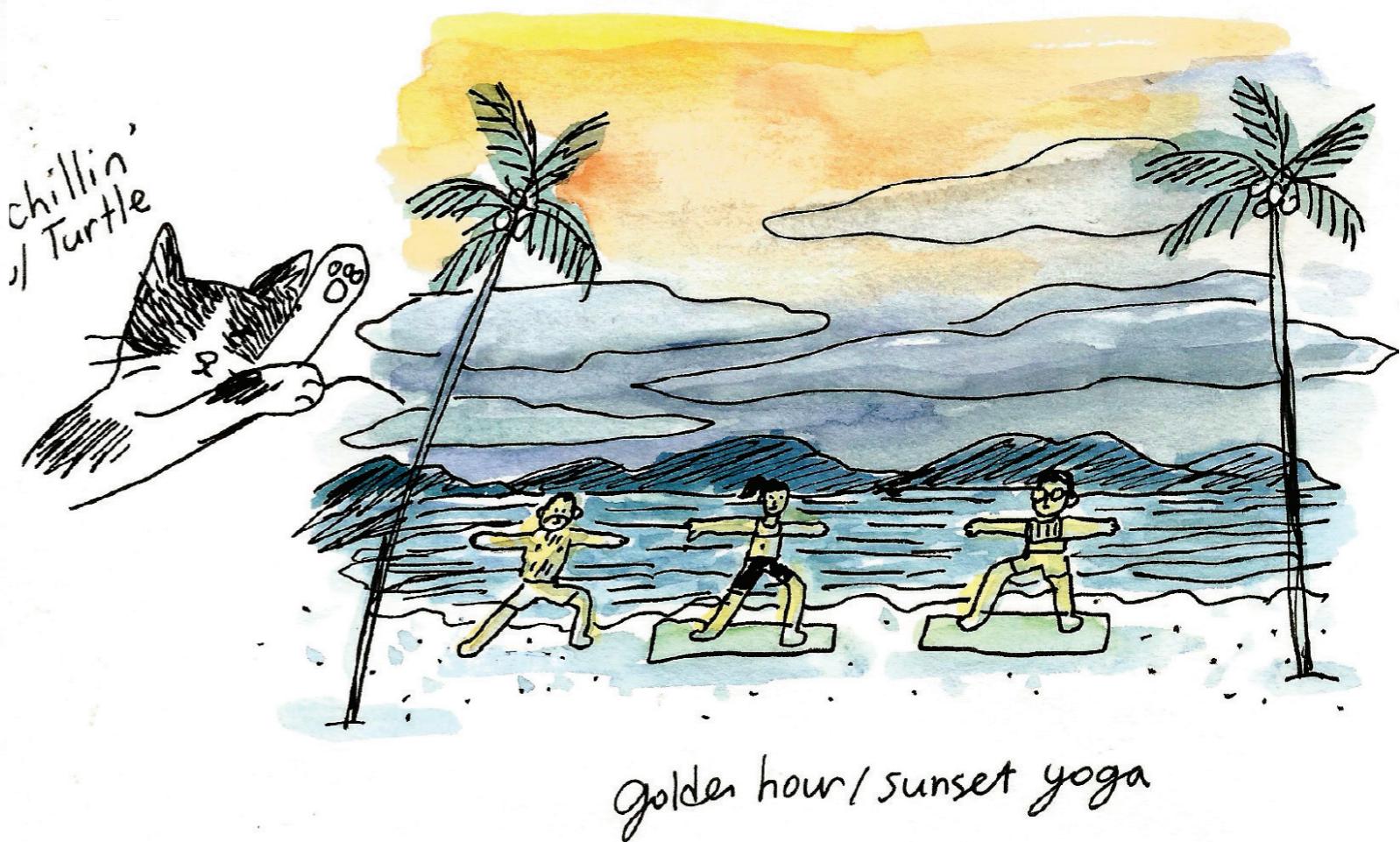
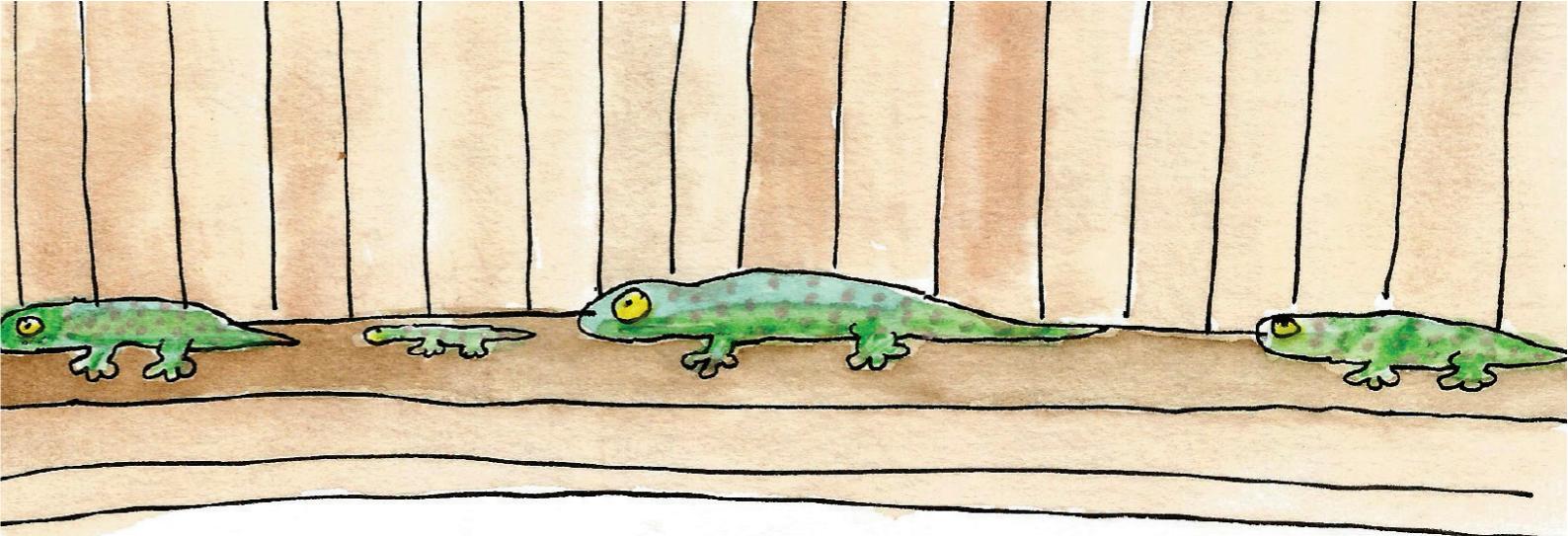
One day we went to the boat to spend the day – it was amazing. We arrived to a beach at the other side of the island and we stopped there to walk around and swim. Suddenly it started raining, I was a bit cold so, funny enough, I went inside the sea which was much warmer.

I laid in the water, floating, with my eyes closed, and felt super happy. I could hear the waves and see the lights from the clouds moving in the sky with my eyes closed. I wanted to take that moment home, so that's what I did through the glasses.

One Arduino, 2 speakers (one for each lens), LED rings and a sound card reader made this simple device that allows you to bring the island home with you.

Tech wise, I recorded sounds of waves and compress them so they could be played by the Arduino. I placed the speakers in the lenses and, behind them, 2 LED rings that would fade in and out randomly with yellowish colors representing the lights in the sky.

The interaction works very simple: you just lay down, put on the glasses with your eyes closed and you just feel the island wherever you are.



COLOCRAFTS

Lydia Ang and Dennis Ang

Dennis and Lydia arrived at dinacon ready to make. They set up their tent, grabbed nearby coconuts and immediately went to work figuring out how to make a variety of tools, textiles, and musical instruments.

Here they present a paper overviewing their work.



DO YOU HEAR AEOLUS: THE KOH LON(G) AND (NOT SO) WINDY ROAD

An exploration of natural materials and construction of wind instruments on Koh Lon

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INTRODUCTION

When we first arrived on Koh Lon, we noticed the abundance of coconut palm trees. Each of these trees had clusters of coconuts hanging on them, ready to drop at any moment and ripe for the picking. They are part and parcel of the islanders' lives, providing a handy and sustainable resource for food and fuel. In fact, the Baan Mai Resort makes use of the coconuts to keep their fires going as well as for refreshing drinks and delicious Thai cuisine.

To the uninitiated, the coconut trees are not a source of danger. Most people are more wary of the diverse wildlife found around the many different habitats on the island. But the islanders know better and avoid standing directly under the tree! The loud, dull thud of another large heavy coconut hitting the ground every few minutes serves as a constant reminder, and sometimes a costly one, to not do so.

Seeing how these coconuts were of such abundance, it makes sense for people to make use of coconuts as craft material! We decided to try to incorporate the coconut as a natural material in our projects. To start, we began with an exploration of what sort of materials we could find on the island, of course including the humble coconut and its tree.

Materials on Koh Lon

The main materials we used from the island were the leaves and stems from palm

trees, bamboo poles, large branches that fell from trees in the forests and coconuts. Palm tree leaves are useful for the fast construction of makeshift workspaces where the ground might be hard, damp, or sandy. Their water-resistant properties make them suitable for weaving into several useful tools including crude hand fans, baskets, and containers.

The center stem of the palm tree leaves is fibrous. We initially attempted to separate these fibers by hand. Then, we tried to break down the fibers to make them easier to separate by bashing the stem with a rock. However, this did not help the slow, tedious process and the resulting fiber was not very strong. We will revisit the use of these stems as a material in later projects detailed below.

Wood is a common resource that is available in many environments. However, when looking for wood to use in craft projects especially those that you can obtain without having to chop down a tree, it is important to think about what sort of stress would be placed on the wood. Some of the wood that we scavenged had insects that bored deep into the wood, which compromised the integrity of the material. This made the material unsuitable for certain craft projects, including some those we detail below, particularly those where the wood is expected to withstand immense pressure due to the nature of the project. Still, these pieces of wood can be used to fuel fires when required.

Making full use of the coconut

The entire coconut fruit can be used in some way or another. We present a comprehensive coverage of how to make full use of the coconut starting from the inside of the coconut and working to the outermost layers. Most of us would be familiar with the consumption of the juice and flesh of a coconut. But did you know that in an emergency situation coconut juice can be used as a short-term intravenous hydration fluid [1]? Luckily, we didn't have to test that one out for ourselves.

The flesh of the coconut can also be used in many ways. Young coconut flesh, which tends to be translucent, has a jelly-like consistency making them perfect for desserts. The riper coconuts tend to have tougher and crunchier flesh that is a bright opaque white. Desiccating the flesh of such coconuts with a fork or anything with a pointed edge gives you a tasty bowl of shredded coconut that you can eat as a snack or put in dishes as an ingredient. With enough flesh, you can extract out coconut milk simply by mixing the shredded coconut with a bit of water or juice and continuously squeezing the mixture until it becomes thick. Simply strain the mixture with a fine sieve or cloth to separate the solids from the coconut milk.

The shell of the coconut is a very hard material. It can be used as a reusable waterproof bowl, an environment-friendly planter, or even for musical instruments. It can be difficult to manipulate the material into the right shape since it tends to shatter or split easily once you attempt to cut it. However, particularly when cleaned and cured properly, it can become a very durable material.

Covering the shell is a thick, fibrous layer of coconut fiber, or coir. The maturity of the coconut would determine the stiffness of the fiber, with younger coconuts yielding softer fiber compared to more mature ones. The advantage to using coconut fiber in craft projects is that the fiber is relatively easy to separate out and provides immense strength when twisted together.



COCOCRAFTS

Before discussing how to make coconut rope, we first need to learn how to process the fiber. In the next few sections, we show you how to deconstruct a coconut, from outer layers down to the innermost layers.

Stripping the husk from the coconut shell
The first thing you need to do once you get your hands on a coconut is to strip the husk away from the coconut shell. To do so, you do not need any fancy tools. One simple tool that will help you in this quest is the humble rock. Find a rock with a blunt protruding edge (see Figure 1 below) that fits comfortably in your dominant hand.

Figure 1: A rock with a blunt protruding edge circled in red.

The goal here is to weaken and separate the husk away from the hard shell hidden below. Place the coconut on a flat surface so that it doesn't roll around (grass works really well), take the rock and bash both the top and bottom of the coconut a couple of times. The top of the coconut is usually roundish and the bottom is usually pointy (see Figure 2 below).

Figure 2: The top and bottom of a coconut indicated by red arrows

Once the top and bottom fibers have been bashed, make use of the separation to rip



the husk off the shell (see Figure 3 below)!

Figure 3: Ripping coconut husk away from the shell. Hold down that coconut!

Work your way around the coconut, using the bare areas of the coconut exposed from the previous rips to access better areas to grip the husk. It might help to use your rock to bash a line on the husk from the top to bottom. Doing so would weaken the fibers on that line and make it much easier for a rip to be executed there. At the end of this, you should end up with almost no breath left, a pile of coconut husks, and a bare coconut.

Crack that coconut

Before you proceed on to extract the fibers from the husk, you need a break! So



we are now going to crack that coconut open and enjoy a refreshing sip of that sweet coconut juice.

We also have a video tutorial up on YouTube at <https://youtu.be/4xOJsgy8HTs>.

To crack open the coconut, locate the three natural markings that are on the coconut. The markings resemble the eyes and mouth of a surprised face (see Figure 4 below).

Figure 4: The “eyes” and “mouth” of a coconut! :o

Locate the natural line that will be found just in the middle of and a little bit above the “eyes”. That is the line that we will create a crack on in order to get to the juice! Grab your trusty rock, hold the bare coconut in a comfortable position where you will have easy access to the line.

For first-timers, it might help to hold the “face” sideways, as if the coconut is about to take a nap. This is so that when the coconut splits into two, the juice does not just leak out onto the ground.

Aiming carefully, give the line a sharp thwack with the protruding edge of the rock. The coconut shell will split into two, exposing the flesh and the juice! If the crack does not split the coconut shell in two, continue with sharp hits with the rock along the line until it splits into two halves.



Take a break, enjoy the coconut!

Coco-crafts: Husk to fiber to rope?!

Now that you are all filled up with coconut goodness, it is time to get the fiber out from the husk. The fiber can then be used for all sorts of craft projects. We will show you how to make your own rope out of this fiber.

For a video tutorial, you can hop on over to YouTube at <https://youtu.be/bNX-EESP6s50>.

To start, grab a husk from your pile. We will not be using the hard outer shell of the husk for the rope. Instead, tear out a bunch of the fiber from the husk. The goal of this exercise is to separate the fiber into individual strands so that we can use them in our projects. Also, we need to process out the little grainy bits from the long pieces of fiber. The bits are known as coco-peat, which is a brilliant soft loamy medium for growing plants or used as a soil amendment as it has great water retention properties but remains loose when wet.

We are literally going to rub the coco-peat out from the fibers. There are two ways to do this. The first way to place the fiber between your flat palms. Then simply rub the fiber between your palms. The second method works better for individuals who have less hair on their thighs as it involves rubbing the fiber back and forth on the

thighs with one hand or even both hands. You could use one hand on each thigh once you get good at it!

With enough rubbing, only the long strands of fiber will be left in your hands. Now to make some rope! Take some fiber, the amount you grab will determine the thickness of your rope. Hold the fibers as a bunch horizontally, between your two thumbs (see Figure 5 below).

Figure 5: Holding a bunch of fibers between two thumbs

Next, make an inverted U shape using the fibers (see left of Figure 6 below). Begin forming your rope by twisting the fibers between your fingers and thumbs, with both thumbs twisting in the same direction. That is, both thumbs should be moving in the same direction. If you do it right, the inverted U will start twisting on itself, forming the rope (see right of Figure 6 below).

Figure 6: Holding a bunch of fibers between two thumbs (left) and twisting it into a rope (right).

Continue twisting until you are left with a short length (about 5 cm or 2 inches) of fiber. To make the length of your rope longer, grab another bunch of fibers, making sure that the thickness is roughly the same as the initial bunch. Overlap the start of the new bunch with the end of



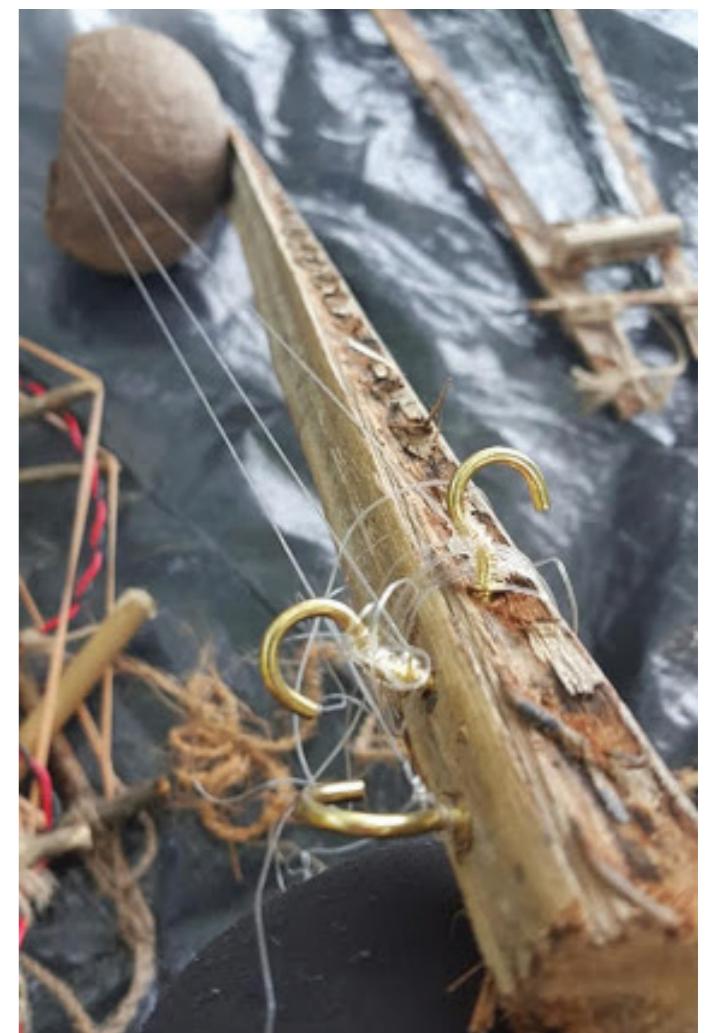
wire and attaching them to light an LED (see Figure 7 below).

Figure 7: Making Functional Electronic Coconut Wire

We found out a few interesting things about working with coconut wire. First, it conducts electricity just as well as normal wire. The circuit we made with the coconut wire remained stable and functioned well as a wearable. Second, the wire reacts to the soldering process well. It did not start burning up as we thought it might. As a bonus finding, soldering coconut wire smells like popcorn!

Coco-crafts: Coco-uke

We decided to attempt to make a musical instrument using the many hard coconut shells found lying around the island. These coconut shells are good resonant bodies that can help to amplify the vibrations from the nylon strings. One idea was a coconut ukulele.



the old bunch and continue twisting. The fibers will intertwine naturally and form a strong connection without the need for any form of adhesives! To finish, tie off the rope with your preferred knot and make sure the knot is secure. You have just made some coconut rope!

Coco-crafts: Conductive coconut wire
Having the spaghetti of electronic wires for an outdoors project might not be a pleasing aesthetic to have. With projects that interact with creatures, these creatures might avoid your contraptions because it just doesn't blend into the surroundings. The use of coconut rope in place of wires could be useful for a more naturalistic aesthetic. Unfortunately, coconut fiber is not exactly the most conductive material around!

Fret not, we have the perfect solution! Strip some stranded wire and just twist some of the metal strands into the coconut fibers as you make the rope. We tested this concept by making some coconut



To achieve this, we fashioned a fingerboard for our coco-uke using a palm leaf stem that had been dried for a couple of days. The soundboard was constructed out of a broken coconut shell that we trimmed with a handsaw before filing it flat (see Figure 8 below).

Figure 8: Coco-uke made out of palm leaf stem and a coconut shell

We attempted to make tuning pegs using some brass hooks which functioned okay, but future iterations of the coco-uke could use a better mechanism such that the string doesn't unravel as easily from the tuning pegs.

The tuning process itself was very gradual as compared to that in a standard in-



strument because of the flexible nature of the palm leaf stem. It did eventually stop warping and was able to withstand the tension of the strings when they are tuned to standard ukulele tuning.

WIND INSTRUMENTS

We also explored musical instruments that did not make use of the coconut but instead were focused on making use of wind to produce sound.

Figure 9: The first Aeolian harp, post-termite wood salvage

Figure 10: Our 2nd Aeolian harp

Aeolus, as portrayed in Homer's *The Odyssey* [2], is the keeper of winds and the ruler of the floating island Aeolia. The Aeolian harp, as the name suggests, is a harp played by the wind. As with a normal harp, its traditional design comprises a frame, a resonator, and some taut strings. Unlike a normal harp which requires human intervention (i.e. plucking) in order for sounds to be produced from the strings, the Aeolian harp sounds when wind is blown across the strings in the right way.

Aeolian harp (big)

Inspired by large-scale Aeolian harp builds that have been done in other parts of the world, we attempted to build one of our own using the resources on the island.

The frame of our first and largest build was made with fallen tree branches, tied



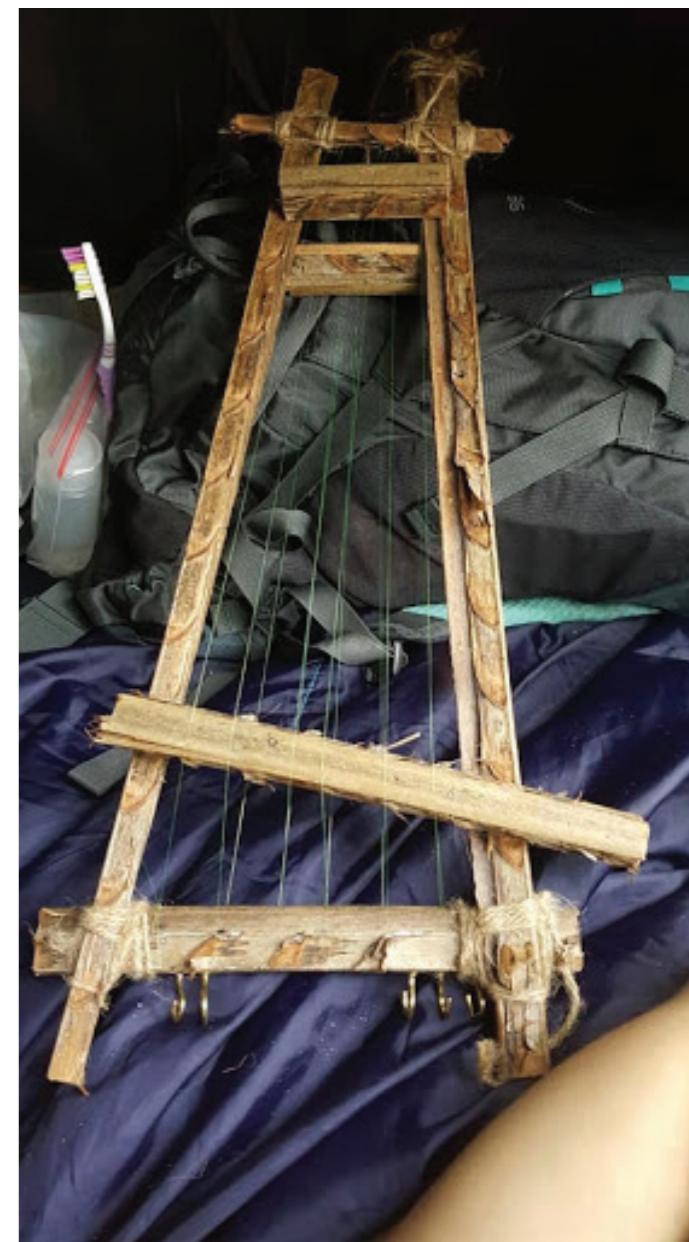
together into a rectangular frame, with some twine. Enough space was left on one end of the frame so that the harp had legs that we could then stick in the ground (see Figure 9 below). Approximately twenty nylon strings were then stretched taut lengthwise across the frame. After assembling the harp, we stuck its legs in the sand on the beach and waited for the right wind to pass through it. Occasional adjustments were made to optimize our chances of catching "good" wind.

Unbeknownst to us, our unfortunate choice of a termite-infested tree branch would cause the frame to collapse partway through the waiting. Following this event, a new replacement branch was picked after careful inspection. The two broken ones, while still holding the nylon strings, were pulled and tied as close as possible to the new branch.

Aeolian harp (medium)

Reacting to the breakage of the first frame, a triangular frame was used in this medium sized design to provide better structural integrity.

The triangular nature of the structure also allowed for a range of difference in the lengths of nylon strings that the rectangular frame did not. Unlike its predecessor, this design had only one leg holding it up in the sand, making it easier to adjust by rotation.



Bullroarer

Impatience and curiosity gave us the idea to create the wind where there was none. To demonstrate our point and explore our options, we built some bullroarers. First, we tied two sticks together to make a cross. Notches were then made on the ends of the sticks so that a rubber band could be stretched out and set in these notches to make a taut quadrilateral shape. Finally, a length of twine was tied to the end of one of the sticks. An oscillating drone was produced when the bullroarer was spun.

Bullroarer/Aeolian Harp Hybrid

With the concept of a bullroarer in mind, we sought to come up with a bullroarer/Aeolian harp hybrid to solve our windy problem (see Figure 11 below).



Figure 11: Bullroarer/Aeolian Harp Hybrid brainstorming designs drawn in the sand

We began by putting together a yet smaller version of the Aeolian harps we had previously built. This version featured the sturdy stems of palm leaves instead of tree wood (see Figure 12 below).

Figure 12: Bullroarer/Aeolian Harp Hybrid, with a stick in place by brass eyelet hooks

Three options of rotation aids were considered and tested: 1) a length of twine tied to one end of the harp like a bullroarer, 2) a stick held in place by brass eyelet hooks so that the result resembled a ratchet noisemaker, and 3) a length of twine pulled through the series of eyelet hooks to create a collaborative jump rope type situation where the harp is the person in the middle.

Bullroarer amplification

The challenge of amplifying a bullroarer started with getting a clean enough audio recording of the sound produced. The simplest solution we came up with was to hot-glue a piezo disc to the center of the bullroarer (see Figure 13 below). In this solution, however, the sound captured is not an identical representation of what is heard. This is because sound captured and amplified is a result of vibrations from the rubber bands traveling through

the wood, instead of through the air.

Figure 13: Amplified bullroarer

To stop the wires from slapping against the bullroarer and the bullroarer from flailing around while it was spun, the wires connecting the piezo disc to the audio jack were tied to one of the sticks and also braided with the length of twine that was already attached to the bullroarer.

Aeolian harp (small)

After testing the bullroarer/Aeolian harp hybrid we took the twine off and modified the Aeolian harp half so that became something that resembled a window sill Aeolian harp (see Figure 14 below). Palm leaf stem bridges were added, giving us the option to change the length and tautness of the strings.

Figure 14: Small Aeolian harp with bridges

This small design gave us the most success in producing tones from the coastal winds. Unfortunately, the winds did not pick up until much later, so we had little opportunity to attempt to record the tones.

To watch some of our instrument making process, you can head over to YouTube at <https://youtu.be/3HzHFWHyXL4>

To reduce the wait time for wind, we resorted to using an electric fan found in the nearby headquarters housing the participants of Dinacon. Despite feeling smug about cheating Mother Nature at first, the stream of air produced by the fan was rather uneven, in pulses rather than a steady stream. Thus this method was not quite suitable to produce any tones from such instruments and we had to wait to be blessed with the winds again.

Transverse & end-blown flute

Walking along the beach, we came across a straight branch that had once been home to some unidentified wood boring creatures. The holes left behind made us

wonder this length of wood would sound like if it was made into a flute.

Figure 15: Embouchure hole of the transverse (side-blown) flute

While this attempt was unsuccessful because the wood turned out to be too porous to use, we did find several pieces of dried bamboo to make a transverse flute (see Figure 15 above), and an end-blown flute (see Figure 16 below).

Figure 16: Sanded blowing edge of a bamboo end-blown flute

These two flutes were simple studies that we would have taken further if we had more time. We came across a beautiful flute-to-be, the root end of a bamboo that had very recently been detached from the rest of the plant. It would have been cool to dry and bore through this piece to create a flute inspired by the Japanese shakuhachi.

CONCLUSION

We started off with an exploration of what materials the island had to offer for us to use as resources for naturalistic projects and designs. We found that palm tree leaves and coconuts are versatile materials suitable for a variety of crafts given creative freedom.

We tested out the concept of coconut wire and found it to be quite suitable to be used as a replacement of normal electrical wire in hobbyist projects when concealment or use of certain forms of material might be a concern.

Furthermore, we did several design iterations of Aeolian harps based on the incremental knowledge we garnered over time from experience about the winds on Koh Lon. From shifting to manual wind generation methods to smaller models more suited for the sort of winds found on the island, we were successful in achieving short audible harmonics on the last iter-

ation, which happens to be the smallest version of all the Aeolian harps we made.

While part of the exploration was to find ways to effectively digitally record Aeolian harp-esque instruments, we faced difficulties in terms of harnessing the wind as and when we wanted to test out our prototypes. As such, more effort was put into finding designs that were more likely to produce audible sounds rather than the actual recording of these sounds.

From the recordings of the bullroarer, we already have insights as to some of the challenges we will face in recording the Aeolian harps. The ability to produce tones from larger harps would alleviate part of the difficulty of recording this particular instrument. Larger harps would produce more audible tones as compared to smaller harps and thus might not require the recording apparatus to be located directly on the body of the instrument.

Thinking ahead, getting clean recordings of these sounds, specifically of the harmonics produced by an Aeolian harp would require a more contained environment than an open beach on an island in Thailand. An open space with a wind-tunnel mechanism might be more suitable for these sort of recordings as one would only consider a singular wind direction as opposed to the several directions in a more open environment.

REFERENCES

1. D. Campbell-Falck, T. Thomas, T. M. Falck, N. Tutuo, and K. Clem. 2000. The intravenous use of coconut water. *The American journal of emergency medicine* 18, 1: 108–111.
2. Virgil, Homer, and Robert Fagles. 2009. *Aeneid / Odyssey / Iliad*. Penguin Classics.

CYBORG COCONUT GLASSES

Tordo Sanchez



When your glasses get broken in an accident early on in a 8 week conference on an island, it could really suck.

Luckily, fellow dinosaur Tordo came as a glasses mutation design expert! She rebuilt the glasses even better!

Using the coconut rope making technique pioneered by Dennis and Lydia Ang weeks earlier at dinacon, she fixed Andy's glasses and made them much stronger and useful!



"Stylish jungle glasses braided from woven coconut fibers and ultra thin hot orange wire. Creating an unwavering defiance against the current trend in pre-manufactured glasses couture and to prevent old glasses from going into the land fill, Tordo modifies glasses from broken existing pairs, turning them into an aesthetic statement. Andy's glasses (see image) have been outfitted with 3W LED lights suitable for excursions into the darkest areas of the jungle. Comes with a necklace holder integrated with an on/off switch."



ODE TO DINACON

Plusea

The Best Thing about Dinacon

You work
get hot
maybe frustrated too
and then
take off your clothes
and swim in the ocean.

Koh Lon, 6/7/2018



The Second Best Thing about Dinacon

Sitting on the porch
crochetting plarn
listening to friends talk
about why we're all here
and why we'll all come back
together again.

Koh Lon, 7/7/2018

The Third Best Thing about Dinacon

Is more important than the first
we're in love
but still in the early stages of this relationship
learning to make meaningful connections
between zeros and cocoanuts
between dinaflagulance and ones

as love-affairs go
we worry about making this one last
our fear of rejection
growing every day we don't act

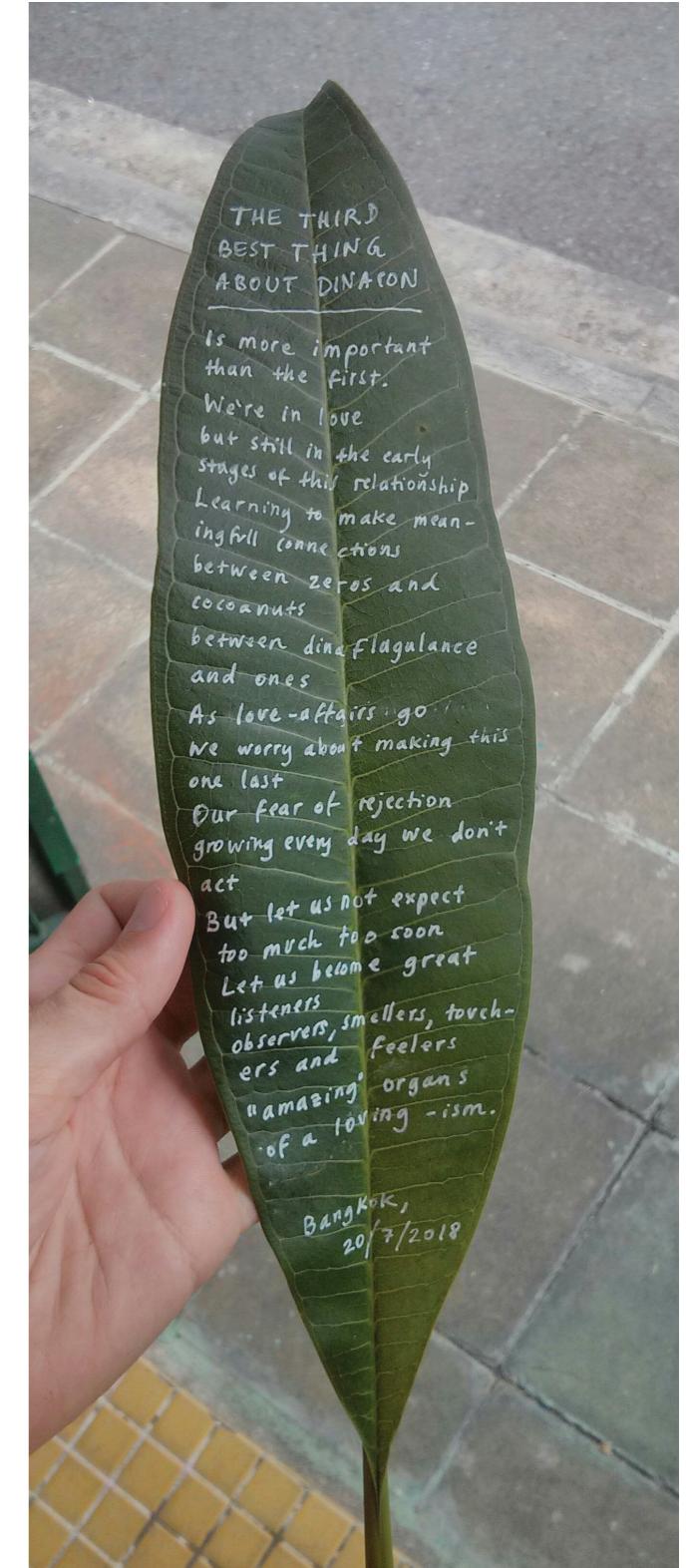
but let us not expect
too much too soon
let us become great listeners
observers, smellers, touchers and feelers,
“amazing” organs
of a loving -ism.

Bangkok, 20/7/2018

The Least Best Thing about Dinacon

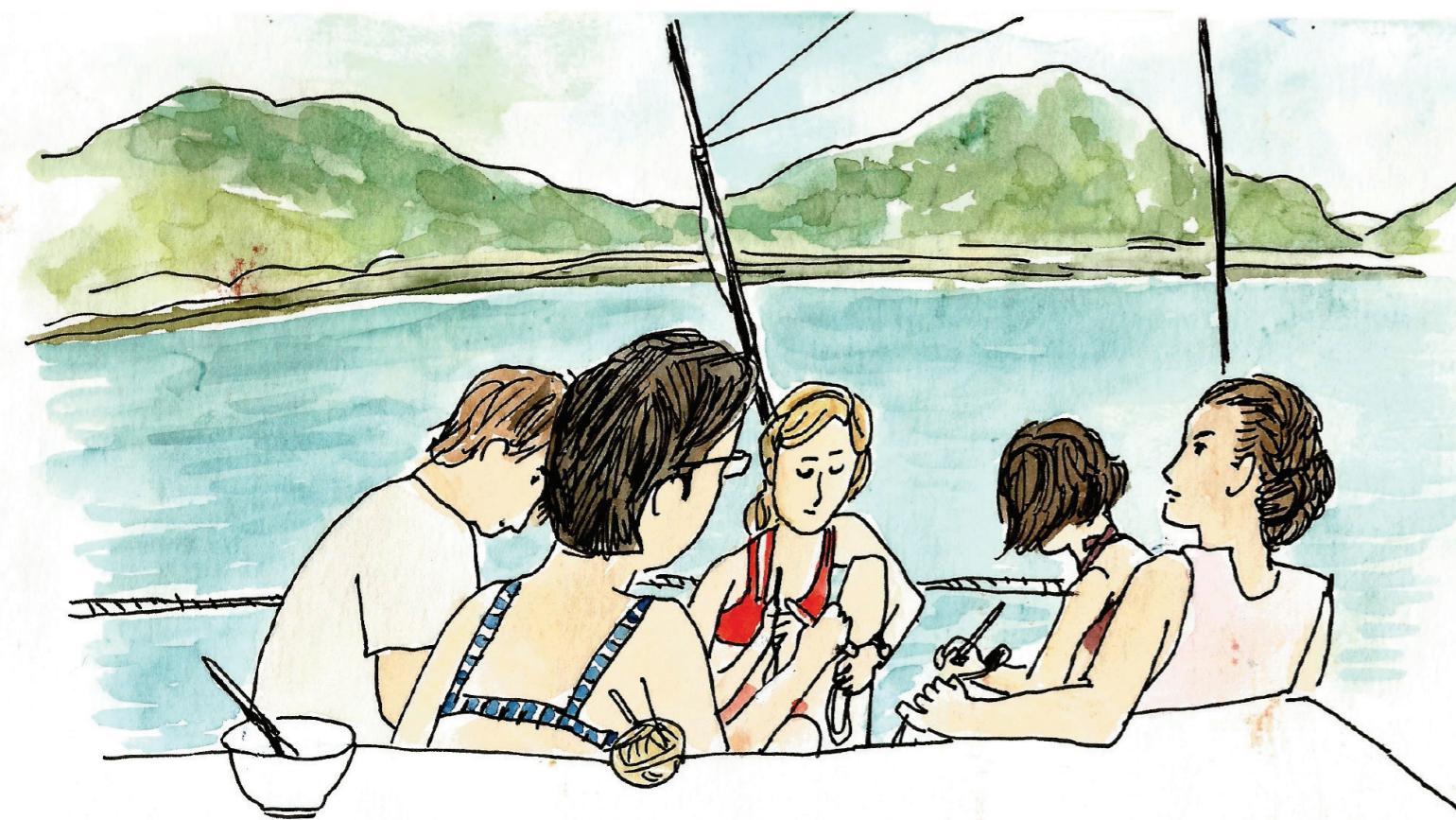
Were we just flirting with nature?
making believe
that it is on par with our art science
technology mix
the cocktail that keeps us going
producing knowledge
and plastic.

Berlin, 30/8/2019

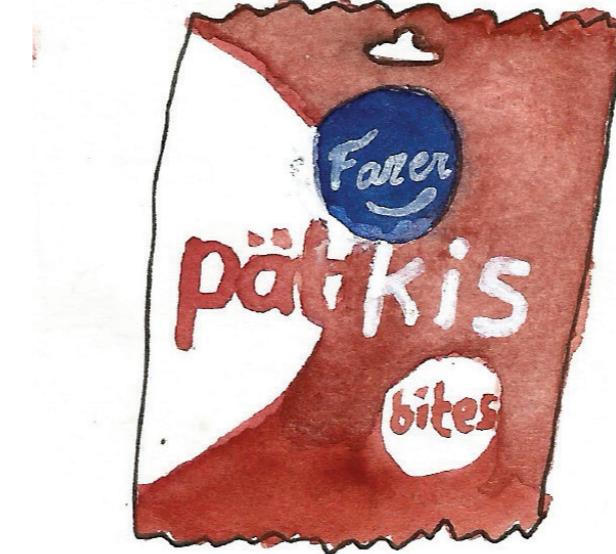




Presentation Night - Photo by Umeed Mistry



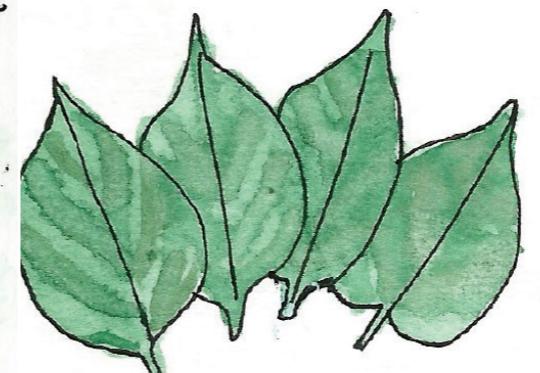
Krochet with Kitty



^{finnish}
The Snack that captured
all our hearts

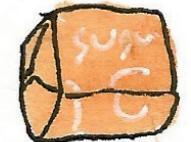
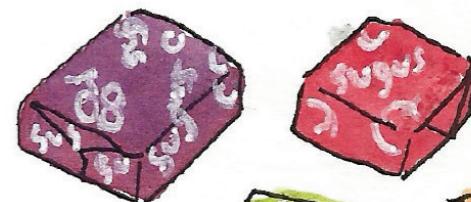


Another finnish treat
(minty, chocolatey)

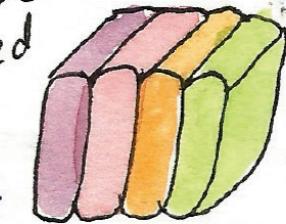


Pom made us ດັບຍຸກ໌
from foraged betel leaves

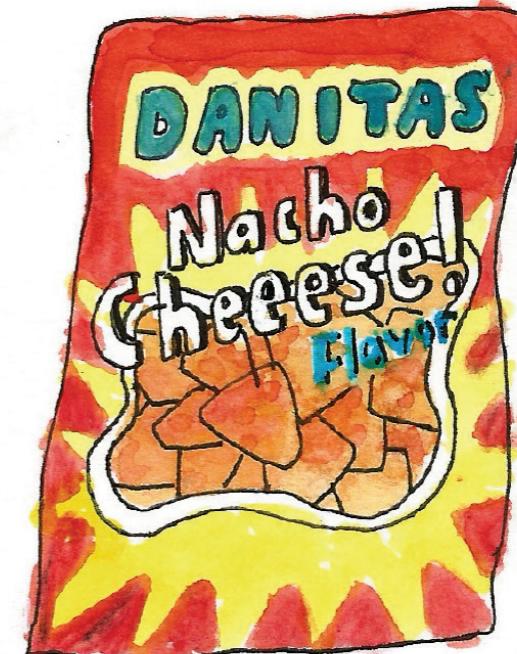
ADVENTURES in snacks



All the
flavors of
SUGUS
Combined
to make



megad-
SUGUS



Nacho chips
dipped in
cream cheese

EXCERPTS FROM DINACON

Deke Weaver
dekew@illinois.edu
unreliablebestiary.org

I came to Dinacon with the intention of writing and reading for TIGER, the next performance in my life-long project, The Unreliable Bestiary – a performance for each letter of the alphabet, each letter represented by an endangered animal or habitat. So far my collaborators and I have made MONKEY, ELEPHANT, WOLF, and BEAR. I'm aiming to have TIGER ready by Fall 2019. Here are some raw excerpts from what I was writing.



June 5 2018 Tuesday

Flying to Hong Kong. 12 hour layover before flying to Phuket. Then a 2 hour taxi to Chalong Pier. And then I wait for a boat. And then I take a boat. Out to an island. Koh Lon. That's the island. To the Baan Maai cottages. I hope this is how it all works out. We flew past Churchill Manitoba and Hudson Bay. I have a card of a polar bear cub with me. We flew next to Lake Michigan and over Lake Superior. Now we must be somewhere... Northwest Territories? Siberia? Well. We've only been flying for 3 1/2 hours. It's going to be a total of 14 hours and 50 minutes. We pulled away from the gate around 3:35 PM Central Time. We taxied for a long time. Finally took off at 4:10 PM. So we should be flying until 7 AM Chicago time, or 8 PM Hong Kong time. I'm glad to be sitting next to the window. Wait... Is my seatmate going to pee? No. He's gone back down into his seat. Seems that he's jacking into a movie. He doesn't speak English. The pilot or copilot sounds Aussie. The stewards and stewardesses speak English and Chinese. Maybe other languages. The man next to me was reading a Chinese newspaper and the stewardess would switch to speaking in Chinese when talking to him.

Yesterday was very full. And so was this morning. Everything gets scaled to the expectations of the journey. If you expect a 16 hour flight, the 2 Hour drive up to Chicago isn't a big deal. The hour-long wait in the security line isn't either, just glad that I gave a three hour cushion. After the long bus ride to the terminal and the security line – I only had 45 minutes until boarding. But here I am with 275 passengers and I don't know how many crew. Boeing 777.

June 8 2018 Friday

T-shirts worn by Chinese tourists; CREATE ACTICITY enjoy leisure (no typos there – that's what it said). A small child with a black T-shirt wandering on the beach. In white block lettering the shirt says I am drunk. But I look again and the shirt says SLAM DUNK.

Numbers. 900 languages in India. How many in North America? 300 before European invasion – according to Robin Kimmerer. Tigers can do it – sexual relations – 50 times in one day? Two days? How does it work? Need to look this up.

"She announces her fertility by repeatedly scent-marking the borders of her territory with a pungent, thick, musky fluid and roaring lustily until one or more males respond. The embodiment of liberated lascivious female desire, she allows them to fight without quarter for the privilege of enjoying moonlit nights and torrid days of violent unremitting passion, in which the victor may mount her as many as 50 times. Even today, Rajasthani men boasting of their masculine potency refer to themselves as 'two-legged tigers.'" p. 36 Tiger by Susie Green (Reaktion Books)

A tiger population can bounce back pretty quickly if there's enough food. And for there to be enough food, they need to have solid habitat. (There is a cat lying on my feet right now. I like it. He's cleaning himself. His name is Turtle.) I'm sitting on the porch of my cabin. I'm on Koh Lon. Which I think translates to Lone Island. My cabin is surrounded by palm trees, myna birds, and at 6 AM this morning, a huge amazing chorus of cicadas. Totally amazing. A slow, very slow crescendo. Five black heron-ish birds on the beach. There was a lot of wind. The tiniest bit of rain. Threats. Here at the beginning of the monsoon season.

Yesterday, in the Hong Kong airport, there was heavy rain. We had to be bussed out to the airplane. While standing in line, the stewardesses would check your boarding pass and hand you a small plastic bag which was filled, packed, with the flimsiest of throwaway ponchos. They packed us on two buses. When we were coming up to the checkpoint, I could see the rain coming down in buckets. Like a fire hose. The flimsy ponchos – they really felt like slightly, barely organized saran wrap – as if you were a bowl of cold tuna salad and the purpose of the poncho wasn't really to

keep off the rain (or torrential downpour depending on the moment) that was actually intended to simply prevent the other food in the fridge from becoming infected with your fishy onion stench. They packed us onto the buses. The buses were under an overhanging roof – so no threat of the rain here. But standing there on the bus looking at the rain absolutely DRIVING DOWN out of the sky – well, I put on my saran wrap. Most other people did too. But then, as we stood there, on the bus, more and more people packing on, the rain let up. And then the rain stopped. Finally the bus drove out to the plane. Right up to the canopy stairway that led up to the airplane door, so when it came down to it, there was about... 6 feet that was unroofed, uncovered, unprotected from the sky. 6 feet and hundreds of bags of organized saran wrap, liberated, free and wild and open and loose–this saran wrap could go back to its natural habitat: the Pacific ocean Northern Gyre. Great garbage patch of the north. Does the Indian Ocean have a gyre? Are the waters in Hong Kong the China Sea? How does this work? I can talk to Mr. Google I guess.

I drove up to O'Hare on Tuesday morning. Left at 10:15, got there by 12:15, driving 80 most of the way. (Oh – the cicadas have started again– it's very subtle– who starts it? Why does it start? What is the initiating factor? Barbara Ehrenreich quote "an emergent quality." That's what was happening at 6 AM. I don't often find myself paying attention to a sunrise. Actually there was no sun this morning. Just a brightening of the clouds and the ocean. Chalong Bay. Cicadas. Ocean. Herons. Wind. Palms in the wind. Myna birds. Cats. Bugs are holding still in the wind.) It took a little longer than usual to park. The train–shuttle to the terminals is on the fritz, so, buses to the terminal. The international terminal was last. Cathay Pacific. Hardly any line. Checked my bag all the way to Phuket. Makes me a little nervous. 12 hour layover in Hong Kong– will the bag make a dash for freedom during its 12 hours in non-transit? But I go with it. I have prepared for this journey. A 14

hour and a 50 minute flight from Chicago O'Hare International to Hong Kong... whatever that airport is called. I have a seat next to a window: 69K. When I check in to claim my seat, the chart doesn't have many openings. There is an open row at the back, in front of a row of seats that are all marked "U". I look at the keys. What does "U" mean? "U" stands for unaccompanied minors. Ah. A row of lost children. This, clearly, was a wildcard. Which way could it go? Terrified, silent, wide eyed children? (Possibly the best kind of children on long plane trips.) Loud belligerent tweens, nonstop computer games, kicking the seats in front of them. Or babies that scream. For 14 hours straight, with the 50 other minutes spent drinking water because they are so parched from the screaming. Well, as it turns out, the row designated reserve for unaccompanied minors is actually just old folks on their way to Kolkota. They are quiet. They are sleeping. They're watching action movies with headphones. There is a Chinese man that sits down next to me. A large round Indian woman sits next to him on the aisle. Across the way is her husband. He is also large and round and has dark circles under his eyes. The man next to me has unruly gray eyebrows. Lots of personality. He has gray hair. Not quite a flat top but close. He's pretty low to the ground. A collared sort of striped golf shirt. He does not speak English. I do not speak Mandarin or Cantonese or whatever they mean when you say "I don't speak Chinese." He reads his Chinese newspaper. I give him my chocolate bar. He gives me some peanuts.

There are moments in the itinerary that I'm anxious about. These are moments that I might label "unknown." Or, "things I've rarely done." Like Getting a Taxi. Or Getting A Boat That Will Essentially Be A Taxi. Or Going Through Immigration and Customs In a Foreign Land. Or Finding the Hotel That is Supposed To Be In the Airport, And it Pretty Much Is In The Airport, But You Still Have To Go Through Immigration To Get To The Airport Hotel. That was brilliant. A 12 hour



layover. Five hours of solid melatonin induced sleep and then waking up at 2:30 AM, because it's really 1:30 PM... and why, for God's sake, are you asleep? Wake up. There are some flashes in the dark, and I think to myself, "Lightning?" And I'm surprised. Because it all feels so hermetically sealed. So canned and bottled and completely free of the uncontrolled. It is 70°. Probably 68. So everyone has to wear a light sweater. There is a low hum. A fan. A motor. A mechanical drone to bring us back to the swoosh and slosh of the womb. Ebbing tides. In the morning. At 5:30, I head back to the terminal. It's pretty quiet. The only time I've really had to wait was the security line in O'Hare. But it worked out. Otherwise – everything's been fast and smooth. I have not had to take off a single shoe. I have not had to take off a belt or unpack a bag. I did have to remove one laptop. So everything is quiet. Everything is white and metallic and bright. Everything is both in English And Chinese. There are beautiful blond families and advertising. There are beautiful square jawed Chinese men and women. There is the dream of luxury and leisure. And there are expensive watches. Images of expensive watches that are – what – 4

feet across? So there's the picture of the Bulgari watch. On a bright white background. All glowing, lightbox. Lit from within. And under the watch is a sign that says TYPHOON ADVISORY, FORCE 1. A hurricane bearing down on the Hong Kong International Airport? Should I be worried? Should I figure out how I can elevate my lifestyle so I can achieve this magnificent timepiece – a mark of excellence, a mark of the very best. A watch that is powerful. A watch that is a force of nature.

June 9 2018 Saturday
What does typhoon mean? What does Force 1 mean? Is it related to hurricane categories? Will they eventually give us Category 6 with Category 5 becoming ordinary? Will the coming years bear Category 7 or 8 what would a Category 8 hurricane be? 360 mile/hour winds? Raining knives. Tsunamis as a matter of course? Who will be our heroes? Who will save us? The last hope. Will Turtle or his father, Colonel Turtle lead us? Will the Pacific Reef herons lead us? The mynabirds. The hornbills. The palm trees. The coconuts. Pythons and pit vipers and hermit crabs. The wind. The rain. The sky. The ocean. The Buddha on the mountain. The bros

that just arrived for their weekend with their dance music.

There are bros everywhere. All around the globe there are bros. And some of them are here. I have a cat in my lap. Named Turtle. I love this wind. It's low tide right now. So what about heroes? Based in stories. We tell ourselves what we can do and what we can't do. And this limits us. Heroes (are stories about) throwing out the limits—stepping outside the boundaries, outside the box. Beyond our mortal selves. Hanuman – bigger than a mountain. Smaller than a mouse. Saving the world. The lynx water-god. The amphibious Tiger God. They are not friendly. They are not happy. They have enormous power and that power can go in every direction. When you are sitting in a fantasy... well, no, not the fantasy, sitting in the real world but surrounded by all the elements of what people fantasize about: beach, palm trees, ocean, mountains in the distance, birds calling. Last night I saw my first flying fox. A bat as big as a red tailed hawk. Fuck. Amazing. Also: hermit crabs with their vast array of varying show houses. And then two very big crabs that scuttled into big sand holes. Where am I?

The mornings have been so nice. When the sun actually crested the mountain today—just for a little while—there was a time when all the color came into the world. Pinks and teals and tangerines and aqua greens/blues... I had looked down to read for a little bit, and when I looked up—the world had gone from the latent quiet potential of grays and blacks and silhouettes and shadows to full kinetic color. Like someone had flipped a switch. The cicadas. A Hornbill in a tree 15 feet above me. The cats returning to hunt and mew and jump into my lap.

Just got back from a tidal walk with Andy, scouting for a drone shot with mangroves. The tide was coming in, but still low enough to walk out along the rocks and sand, out past the Muslim Village, around the bend. The ocean side of this island was pounded. Devastated by the 2004

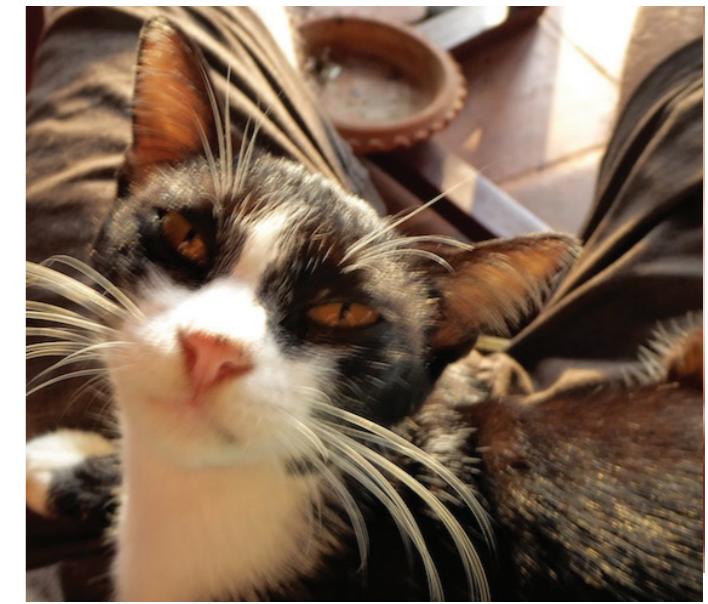
Christmas Tsunami, this side was flooded. LOTS of garbage and debris left over. Today, less, but still plenty of garbage. Here are some of the things I saw: a flip-flop (left foot) covered with barnacles. A fan, somehow all the parts within a couple of yards from each other. Big woven plastic sacks for grain. A motorcycle helmet. A dead puffer fish as big as a motorcycle helmet. A big chunk of thick green rope. Plastic bags. Plastic water bottles. Beer cans. Beer bottles. Broken glass. Netting. A dead ray with its wings cut off.

Maybe today I will write about Monster, Kris Schwartz and the night of 1000 orgasms? Ha ha. 4. Tigers. 50. What? How? Why? When does it flip into pure mechanics? Maybe it's always mechanics? Pure electrochemical biology. She worked at the Lifetime Channel as an editor. Her soft stomach was crisscrossed with scars. Lots of long scars, making a kind of raised skin network. I asked her about them. She didn't want to talk about it. Her fallback, resting state was dour and depressed. She didn't seem to stand out in any way. She had dirty blonde hair. Her shoulders hunched. She could be coaxed into a kind of braying, chatty humor -- and she assumed, well, of course if we're having this frank talk— we are talking honestly here, right? Well, if speaking frankly—of course you're going to agree with her. And that whine, that... whine, with its assumed, "We're all friends here" talking about the agreed-upon ways of the world—this whine was soaking in the assumption that the world was fucked. That — yes, we can make jokes about it, you know, to lighten the load— but through and through, deep down, at the core of all humanity—everybody everything is darkness. Everything was fucked. And there was nothing they could change that fact. And apparently, she wanted to go out with me. She didn't tell me directly. She told me through a friend. I'd never met her. I knew nothing about her. But somebody wanted me. Sadly, that's all I need.

We went to a bar. We drank beer. She talked about her favorite bands. She said

she wanted to sleep with me. We went to her apartment. She had a cat named Monster. He was a pretty nice cat. At first. And then he was less than nice. He was big. Maybe he was gray. Whatever color he was, he weighed over 30 pounds. Kris's apartment had a small entryway, a small kitchen. Small bathroom. And a bed. Kris lived in this small place with her big cat. They had figured out how to live together. But if you brought in anyone else—the balance was off. I think Monster slept on the bed with Kris. So when I slept over—Monster was shoved aside. Onto the floor and the barely used cat bed. Monster did not like this. So the first night we went to bed—to her bed, to Monster's bed, Monster the mid size predator, not a 500 pound tiger, Monster the 30 pound house cat who had been displaced from his bed. Kris did not want to sleep. Kris wanted to have sex. Kris wanted to come. Over and over. And she wanted me to come. Over and over. Maybe there are people out there who know what normal is. I have no idea. Is it normal to have sex and fall asleep? Let's say you're with someone for the first time. It could be kind of great. It could be exciting and new and thrilling. I've heard stories of famous athletes sleeping with literally thousands of women. So, okay, so that's one kind of normal. I guess. You've got Tom Brady and Gisele. First night. How many times? Now for these two, I'm not sure if they've even actually had sex—like I bet they bought those kids online. I can't imagine them spending any time not looking at themselves in the mirror. Or working on his website — how to live forever and for a small monthly fee, he'll tell you how you can live forever too! How about Wilt Chamberlain— a legendary lover. Or Genghis Khan. Genghis Khan. I am not Wilt the Stilt or Ghenghis or Tom or a two-legged tiger.

Ok. So it's somewhere in the middle of the sex and the not sleeping and the bleariness. I get up to pee. Standing in the doorway between the bed and the toilet is Monster the 30 pound predator. I have to step over this enormous cat. He is clearly not having it. He is a step away



from bristling and hissing. I am naked. I have to make a decision about my dangly cat-toy-ish bits which may or may not entice Monster the 30 pound predator and his claws. I survive the passage. I come back to bed. There is Kris. Mousy. Trying to smile. Trying to get over her shyness. Trying to put on a show, get out past her usual desolation ... or at least put on a funny front where we can join, meet each other in mutual darkness.

Just got back from a 5 1/2 hour interruption. Just in time for the family down the beach that likes having babies, playing shitty music, and grilling. Grilling. A verb. At 12:30 Andy got his drone going and we shot some mangrove stuff. The roots that come up, out of the sand or the mud. Like a small field of them. Oh God... the wind has started. It's so good. It feels so good.

The first morning when I woke up early here, I lay out on the porch, in the dark, 5 AM. And the wind was up. And it's warm. It's not hot outside at night, but it's not cool. But the breeze comes in. And it's all over your body, very gentle. And for a little while, with the cicadas, very slow dawn, the herons walking on the beach in silhouette—an emergent quality—the breeze, the perfect wind on me—the world as a lover. Yes yes yes—it can smack you down too. So can a lover. But this felt so nice. So soothing and perfect. It was a very hot day with sun – so even hotter. So the wind, now, quiet, on the porch with Turtle the forgiving kitten— Ah. So nice.

COCONUT WATER CATCHER

Sjef van Gaalen

Are your bowls too small to catch your coconut water?
Do you struggle to prevent spilling valuable electrolytes?

Is your refreshing beverage filled with gritty husk?

For the amazing price of pretty much nothing you can catch and drink your coconut water in comfort and style!



You will need to prepare:

- A 5l water or oil bottle
- 2 rubber bands
- Some filter cloth
- A knife
- A sharpie
- A coconut
- A good bashing rock
- Your official Dinacon survival water bottle

1. De-husk your coconut as demonstrated in the official Dinacon documentation: <https://www.youtube.com/watch?v=4xOJsgy8HTs>
2. Hold the coconut against the bottle in one hand, and trace its circumference using the sharpie with the other, leaving 4-5cm from the bottom of the bottle.
3. Cut away the plastic area you have traced.
4. Remove the top of the bottle, and fasten your filter cloth over the opening with the rubber bands. Replace the bottle top.
5. Congratulations! You have completed your Better Coconut Water Catcher v1.0

NO MORE SPILLS!!!

Crack your coconut over the catcher and collect your coconut water in comfort and style!

Remove the cap and pour out refreshing filtered coconut water into your official Dinacon survival water bottle!



MOBILE COCONUT YARN HOLDER

Danielle Hoogendijk



Dani sneakedily crafted this wonderful device as a present for our node leader, Kitty Quitmeyer, the renowned mobile hiking knitter.

One thing that is great about mobile jungle tools, is that they let you make stuff anywhere, even back in the city on the subway!



TIDAL MEMORIES

Oliver Steele



Tidal Memories is an interactive, environmentally-informed visualization of photos posted to Matrix (Riot) during Dinacon. It displays photos taken during Dinacon, on a representation of the intertidal zone in front of the Dinacon site in Koh Lon, Phuket, in Thailand.

Photos are positioned vertical along the intertidal zone, according to the tide level when they were taken (or, at least, posted to Riot).

They are positioned horizontally from midnight on the left, to the following midnight on the right.

Some memories are covered by the water. The tide level indicates the current tide in Koh Lon. At high tide, you won't see much.

Mouse over a photo to see its details.

Tidal Location

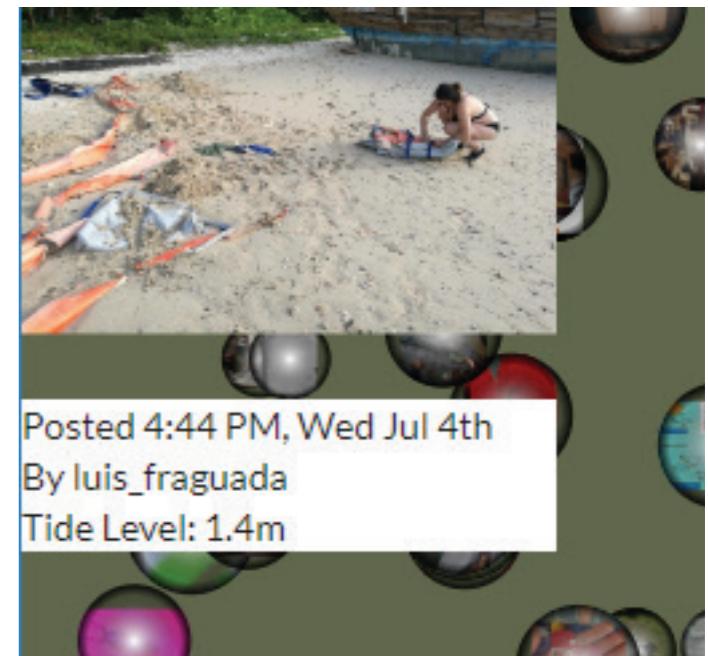
Here are photos at high and low tide, of the intertidal zone in front of the Dinacon site.

If you have your audio turned up, you may be able to hear waves. These were recorded on site.

During (part of) Dinacon, the display brightness was keyed to an on-site light sensor. During night (and when severely overcast), the image would fade to black; during twilight (and when slightly overcast) it would darken. The current display doesn't attempt to simulate this, since doing so would render the display unusable during much of the Western hemisphere's waking hours.

Materials

Matrix is an open network for decentralized communication. Riot is a set of clients (web, desktop, mobile) for viewing and posting to Matrix chat rooms. During Dinacon, participants posted images to Matrix (Riot), as well as to Twitter and Instagram.



The code consists of a scraper, that reads the photos from Dinacon's Matrix rooms; a web client, that displays the scene; a micro:bit program that sends ambient light data to a connected computer; and a Python script that relays this information to the cloud where it can inform the web display. The web client is written in JavaScript, using React, Redux, and SVG. The micro:bit code uses TypeScript. The remaining code is in Python, using Flask for the web server. The system uses MongoDB to store Matrix message and image metadata, AWS S3 to store the images themselves, and websockets to propagate the environmental information from an on-site micro:bit to the display. The API server is hosted on Heroku; the web client is hosted on Netlify.

The source code and installation instructions are [here](#).

Related Projects

Matrix-photo-gallery is a more conventional photo gallery for Matrix (Riot) rooms. I wrote it as a debugging tool, along the way to this more artistic rendition.

Matrix-archive uses similar code to grab photos and chatroom transcripts from Matrix. It was created for use by the documentation team.

ART+BIO COLLABORATIVE EXHIBITION

Carmella Verrastro

Elexis Padrón

Ariel Simon

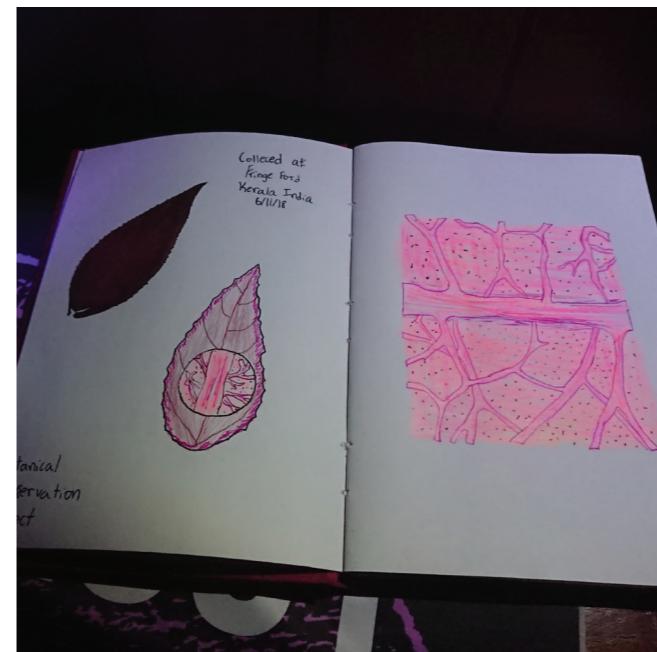
Laurie Wiesner-Phillips

Stephanie Dowdy-Nava

Vida Nava

Isla Nava

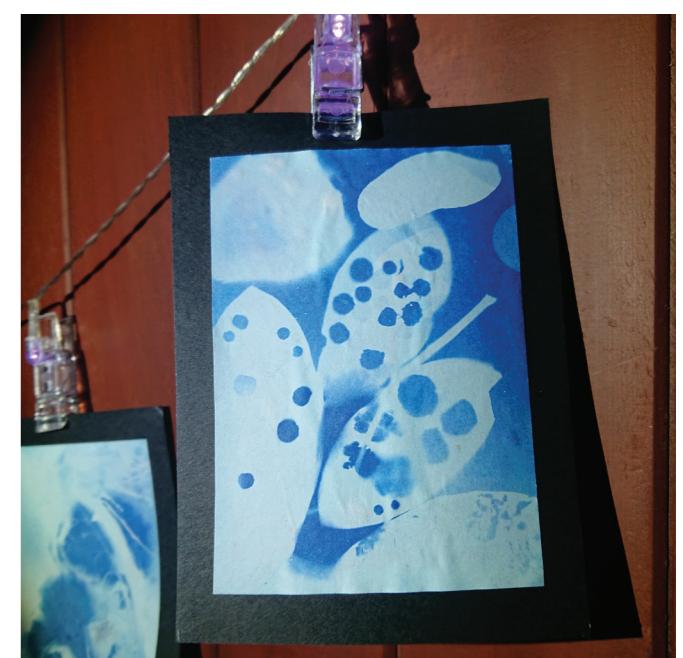
Saúl Nava

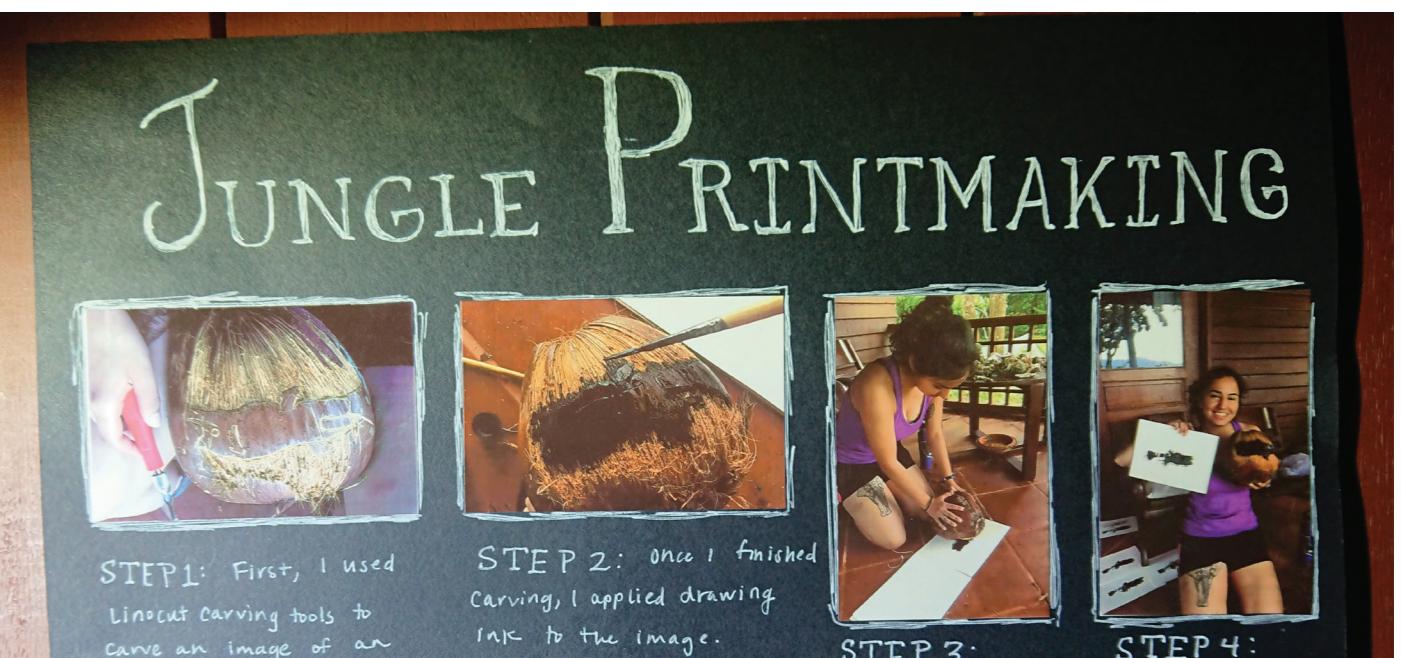
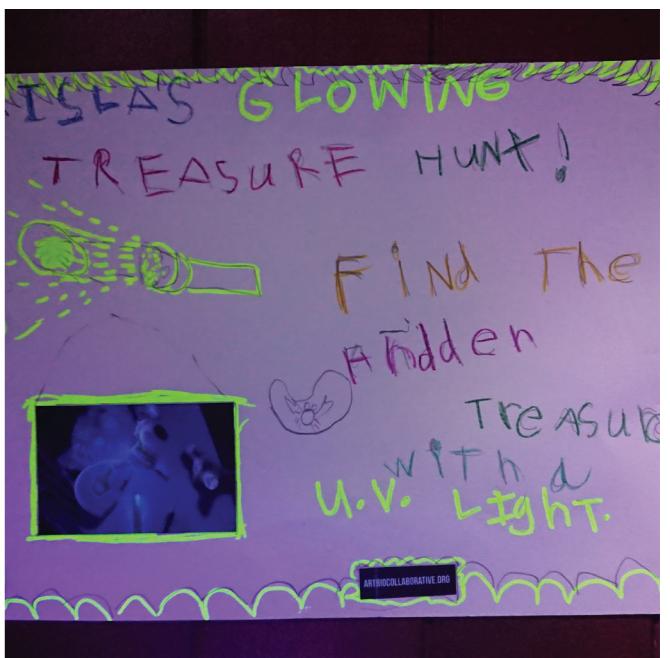
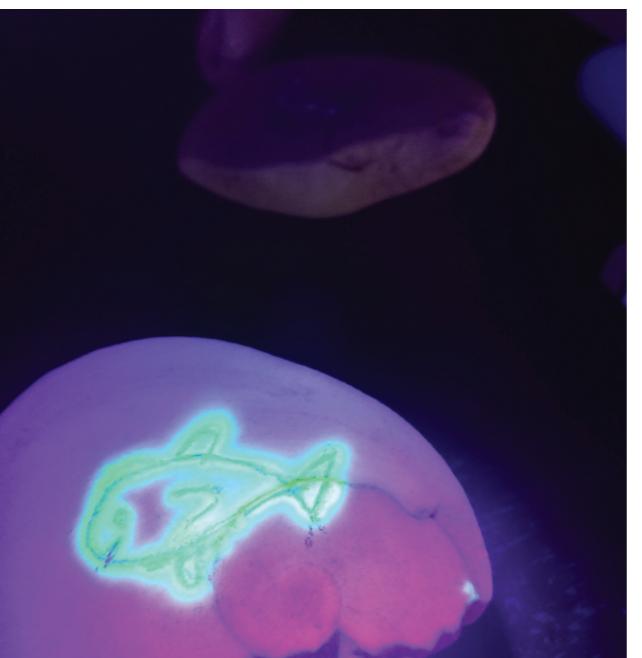
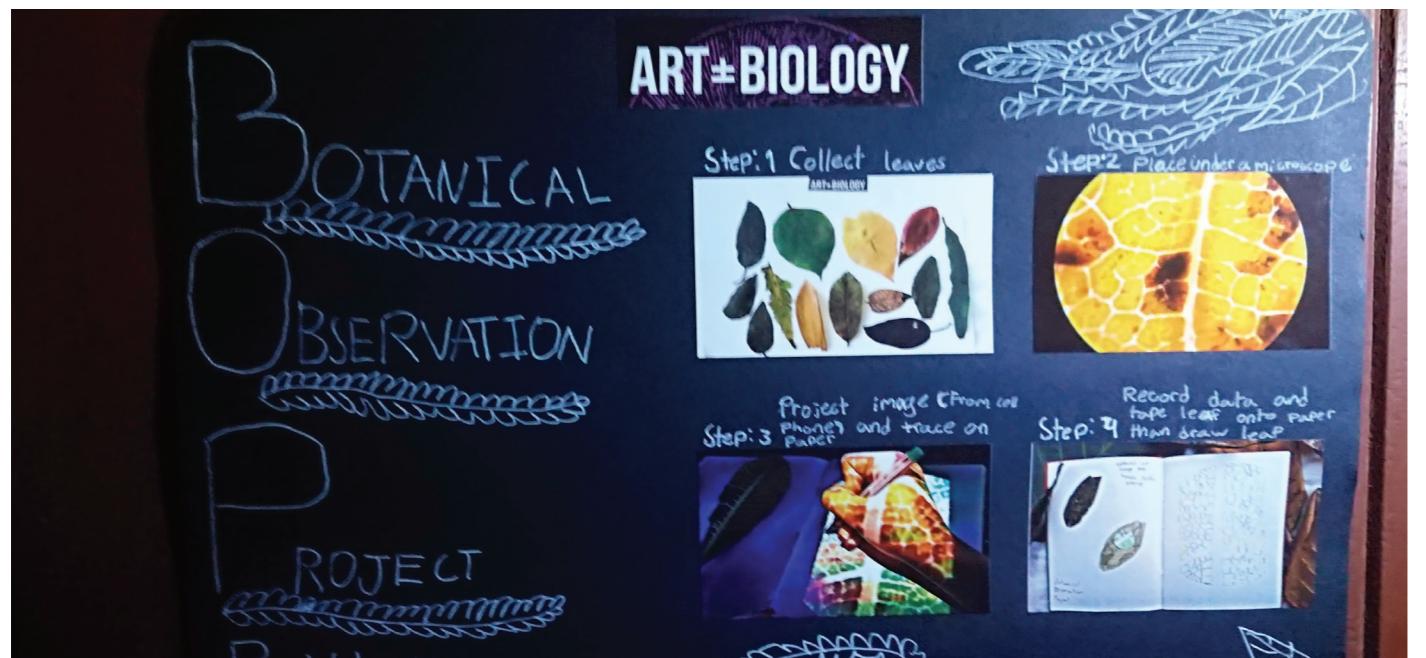


ART+BIO Collaborative joined the Digital Naturalism conference as part of their “Jungle Life: Field Studies of Art+Nature” program.

“Jungle Life is a one-of-a-kind, ART, BIOLOGY and NATURE immersion experience in the Western Ghats of Kerala, India and on the island of Koh Lon, Thailand. This site-specific program focuses on an ART and SCIENCE exploration of the diverse wildlife from varied natural habitats of South India and Thailand. The diverse and unique wildlife and habitats are a source of inspiration and wonder for artists, naturalists, and biologists. Through hands-on observation, artistic interpretation, collaboration and various biological and natural history methods, we will learn to utilize the natural habitat as a STUDIO+LAB to explore, learn, respect, and make informed art about tropical plants, animals, and nature. Jungle Life 2018 will culminate on the island of Koh Lon in Thailand at the Digital Naturalism Conference where we will collaborate with artists, scientists, designers, educators, and technologists to further create novel ways of integrating art, technology, and science in the wild.”

Their projects culminated in a gallery exhibition throughout the house.





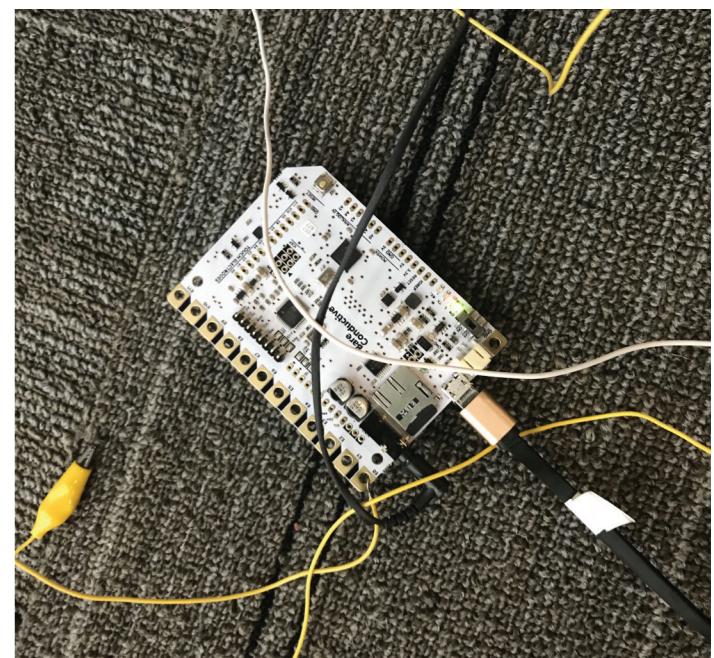
NOCTURNAL GARDEN

Touch Sensor Environmental Art Installation
Joan Marie Kelly



Relax and listen to Gregory Hanks Green play the Khaen a traditional Lao/Thai mouth organ made of bamboo pipes, as colors reveal the garden forms of the Thai forest. Curate the sound of the Khaen and the colors of the nocturnal garden by touching the tropical plants. Discover each note or song and color the touch triggers. Gregory Hanks Green, the curator of the Echols Collection of Southeast Asian music at the Cornell music library is also a Khaen player. Green can be heard in the Nocturnal Garden playing a song on the Khaen in the Lai Nyai mode or create your own Khaen song as you touch the leafy plants. Khaen is tradition Thai and Laotian free reed instrument that sounds when the player breathes in or out. A touch of the plants provokes a note on the khaen or a complete song played by Green as well as an array of twilight colors.

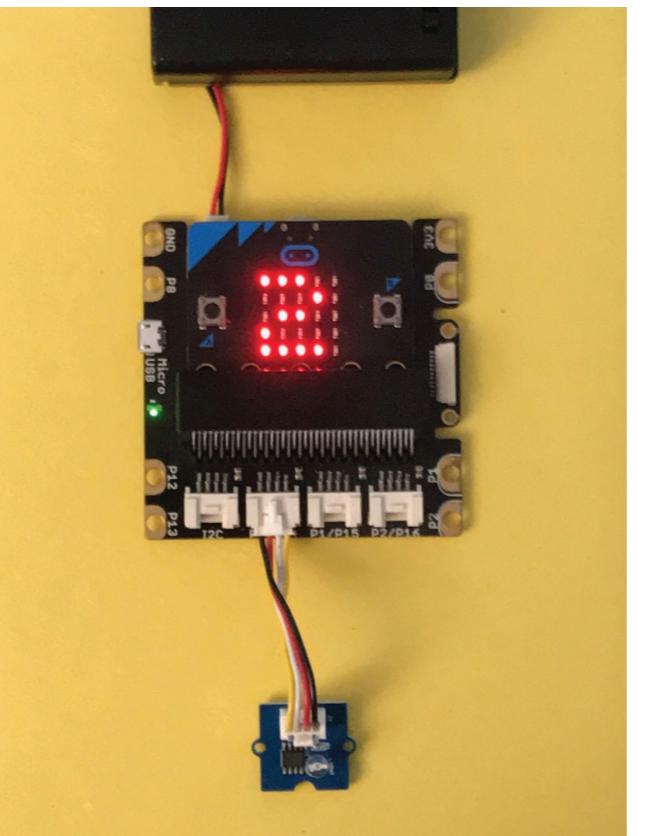
Collaborators: Artist Joan Marie Kelly and Senior Lecturer at Nanyang Technological University, curated the concept, and design of the touch sensor installation specifically for the natural environment of Koh Lon Thailand and the Digital naturalism conference 2018. Senior Technical Manager, animation at NTU in Singapore Nagaraju Thummanapalli coded the music and colored LED light to sensors, Musician Gregory Hanks Green contributed the digital files of himself playing the Khaen, flutist Beth Kelly was music consultant, and Tourism Ethnographer Yuthasak Chatkaewnapanon gave cultural council of the context of the artwork



SUN SET CLOCK PROTOTYPE

Rob Faludi

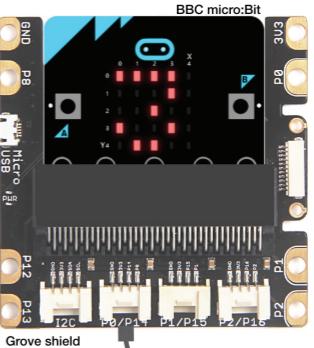
Technology separates us from nature, but does it need to? I used some of my stay at the Digital Naturalism Conference in Thailand to prototype a clock that determines local time of day from sunlight to promote a natural sense of timekeeping.



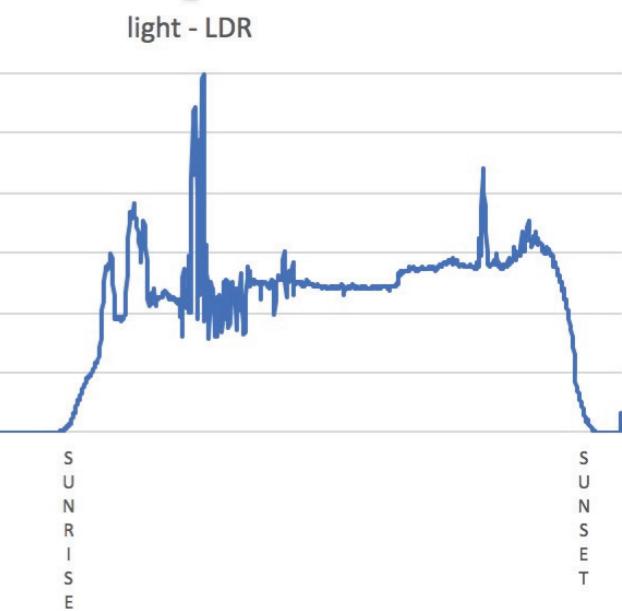
By using technology to encourage human relationships with nature, I hope to highlight that machines can encourage us to be **more** human and organic rather than slowly making people irrelevant. As a counterpoint to consuming industrialized time we can also obtain time from scratch, regaining control of the very pacing that drives our lives. The Sun Set Clock uses local solar time, therefore noon is when the sun is at apogee at our location. This is how time used to be measured, before telegraphs and transcontinental trains required a move to time zones, where the clock and the sun no longer match. This system isn't concerned with exactitude—there's plenty of systems to do that if you need it. Instead this clock can be used to mark the general progress of the day rather than creating anxiety around how every minute is used.

The initial prototype uses light level changes to detect sunrise and sunset, with local noon being the point exactly between these two events. When the clock starts, it makes its best estimate of the time. For example, if it's dark

Time Calculation & Display



Daylight Monitoring



at startup, the clock assumes that it's midnight because that's the best guess you can make without more information. At sunrise, this corrects to 6 am (a higher-quality guess) and then at sunset it will correct to the proper local time (not time zone time but astronomical time at your precise location). All of this works, although it's still a bit fragile—operating best in full view of the sky on a relatively sunny day. Dark clouds, deep shadows and porch lights can confuse it, so these will need to be addressed in a future version. For now, I'm enjoying what I think of as "some time of my own." I hope you enjoy it too.



TRIBENET

Elizabeth Bigger, Luis Fraguada, and Agosto
Mesh sensor network for battling future dystopia

We considered a new communication method for our tribe while adventuring within the island. We desired the ability to communicate in more tonal short messages like birds and other animals. This is part of our theory to try to design to engage and merge with nature, instead of designing 'on top' of nature or not considering nature and its inhabitants in design processes. Our idea further grew over curry and a tribe story writing session and then brought to life via the podcast episode Biobang 006.



Photo by Umeed Mistry



TEXTILE

Walking the on beach the first day on the island, we came across a tree with something stuck in it, and it was a tartan! Having an affinity for all things tartan, we found this serendipitously perfect for our tribeNETs textile needs. We were also able to find another small rag of the tartan in a nearby tree stump. We washed the textile and hung it to dry in the sun.

PATTERNING

The pieces of tartan were patterned, marked and cut, beach side. Using string to translate live measurements and marking the pattern pieces with washed up beach coral pieces. I cut the pieces using first aid kit scissors and hand sewed the pieces together. I stitched the electronics to the wearable pieces and made the appropriate channels to protect wiring and cords. The last pieces to be attached were the protective mesh shell forms over the esp8266 Node MCU modules. All pieces were constructed with reusability in mind, as if we were in actual survival, we'd want to be able to reuse and alter pieces as necessity and need called for.

BUCKRAM SHELL CASTINGS

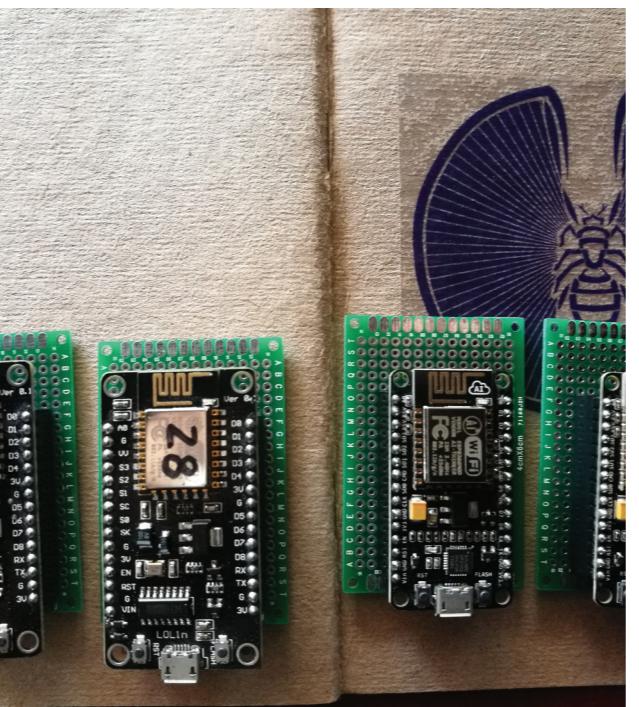
To create the mesh networks protective meshes, we cast buckram over various seashells from the island. These forms





P-102

Proceedings of the First Digital Naturalism Conference



we created with water and buckram, and rubber bands from the dinner food boxes to hold the forms while they dried. After carefully unwrapping the dried formed buckram we were left with the mesh shapes to protect TribeNET electronic components.

MESH NETWORK

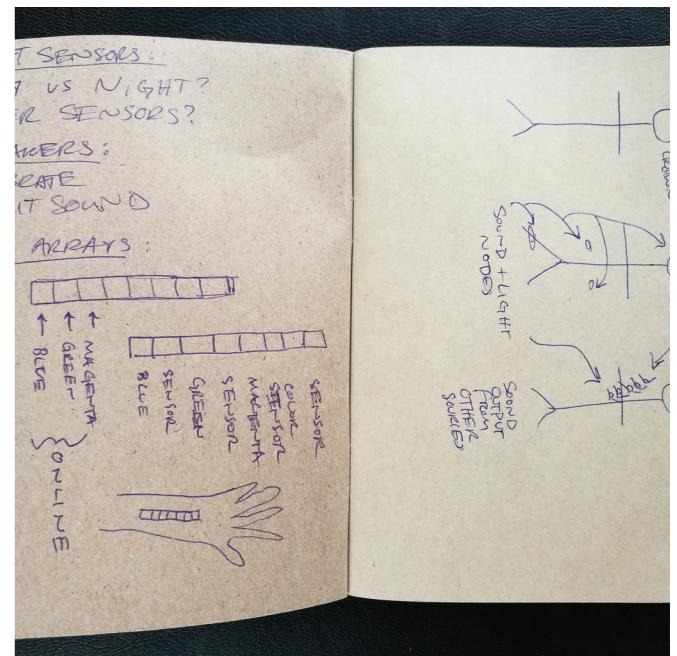
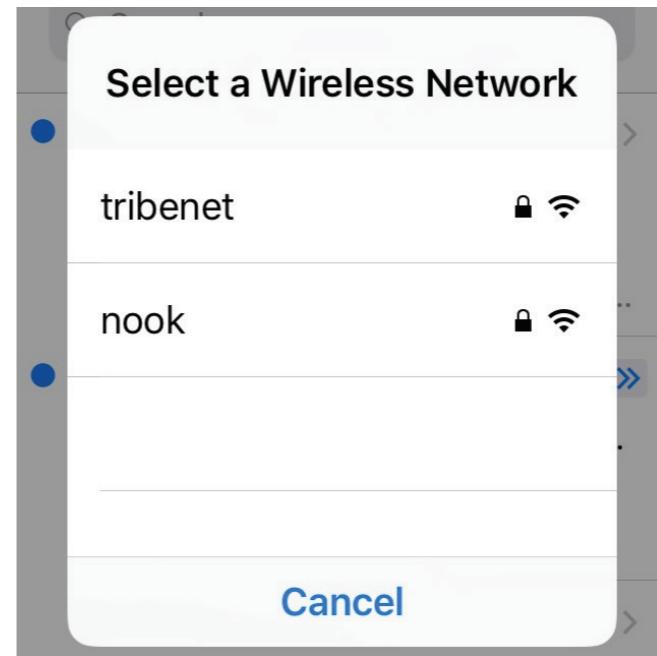
The three wearables are linked together via a mesh network based on the esp8266 Node MCU modules. These nodes are easily programmable via the Arduino IDE, with the complexities of mesh network topologies abstracted out. Two nodes essentially translate an input signal into tones, sent to the output node (worn by Elizabeth). Each node included an addressable RGB LED stick which shows information about the mesh topology, including if a node is online or not. MQTT was utilized as the base data protocol for publishing and subscribing to the different nodes' data stream.

CAMERA NODE

The Camera node takes a live video feed and runs a kmeans clustering of the color information of the input video frame. The camera is mounted to the front of the wearer, giving the system a view in front of the hiking party. These predominant colors are encoded into tone and duration information and transmitted to the Speaker node.

Koh Lon, Thailand, 2561

P-103



PROXIMITY NODE

The Proximity node takes a series of ultrasonic sensor inputs distributed along the height of the human wearing them and translates this “section” into tones. Because the sensors are distributed along the height of the wearer, the textile pattern extends from the shoulder to the ankle. These tones are transmitted to the Speaker node.

SPEAKERS NODE

The Speaker node receives signals from the other nodes in the system and creates a melody which describes the current reality of the hiking party. The data from the nodes was strictly mapped from sensor signal inputs into tone and duration. The resulting melodies must be learned to be understood. The speakers were sourced from the airline headphones we received on our way to Koh Lon. The internal components were harvested from their plastic casing and rewired to the mcu. While this is a low power, low volume solution, it worked very well for the hiking party.

HIKE

TribeNET was used on a hike through the paths of Koh Lon. During this hike the hiking party started to get used to the melodies created by the Speakers



Node. These melodies were a combination of the sensor data, so it corresponded to the colors on the Camera Node and the ultrasonic sensors on the Proximity Node. While the hike was short, the party already could start to discern the melodies created when they were in different positions and next to different kinds of vegetation.

OUTPUT

While the ‘TribeNET’ project started to be conceived prior to Dinacon, it really took shape on the island during a particular lunch where a story was conceived about a group of travelers that came to Koh Lon a few months in the future after Dinacon. The story also had inspirations from episodes of the Biobang podcast, especially the episode with the Bathisphere. In this story, TribeNET is worn by the party of travelers to become a part of nature, or at least, to try to understand nature and become nature themselves. This is because in the future (November 2018 in the story) many things had changed. Microplastic infiltration into everything led to a shortage of clean water like the world had never seen. Countries engaged in the latest of the Water Wars as citizens began to contract MicroAcrylysis (aka The Shine), a new form of skin disease that starts to produce plastic sores on the epidermis and is

transmitted by drinking and absorbing microplastic polluted water. At first, this disease was confused as a trend as people began to accessorize their Shine sores with 3d printed parts and hot glued lab grown crystals. The TribeNET travelers are able to escape contracting The Shine by drinking water filtered by the Faircap (<http://faircap.org/>) and designing their TribeNET wearables. In order to warn the Dinacon participants, the travelers go back in time through a newly discovered, but very dangerous mode of transportation called Light House Jumping, or Light Jumping for short. This allows travelers to jump from light house to light house instantaneously, albeit to another point in time. Unprotected light house jumping causes immediate and advanced skin diseases so protective suits must be worn. Unfortunately, many light house jumping pioneers perished just days after the discovery due to unprotected light house jumping. The travelers jumped back in time to Dinacon at Koh Lon to share the future with the participants and to share their technical knowledge in hopes to steer the future away from the Water Wars, The Shine, and Distopia.

CARGOL – FOUND NATURE OBJECT

Agosto

Agosto, arguably the most youthful member of the Dinacon crew, began his adventures on the island by drawing in the sand.

The island sand was much softer than the man made beach sand of his homeland, and he pondered these differences. He mused, what was home? He began to consider these questions while placing found coral in upright positions in the sand.



Upon seeing the variety of island creatures, such as hermit crabs and snails, he began to wonder how they viewed 'home', as they traveled with their shells on their backs. He sat for a moment, before drawing a large spiral in the sand and stared pensively at this simple view of a home.

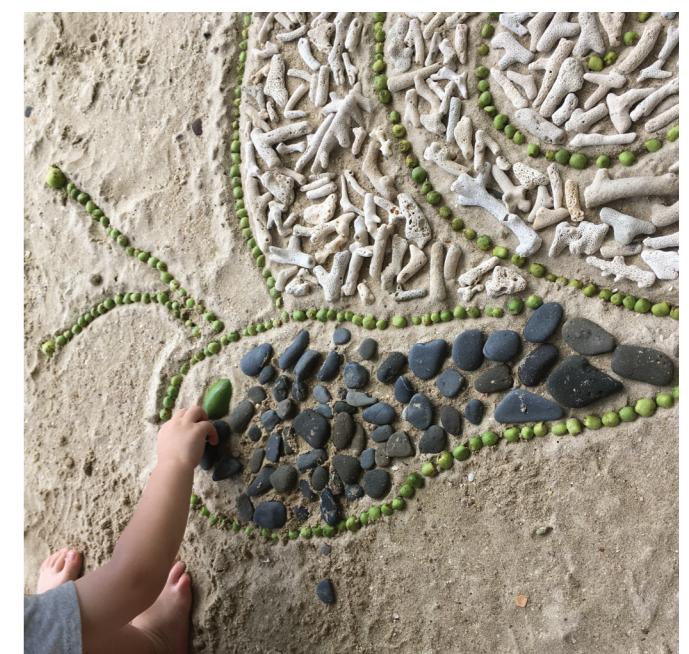
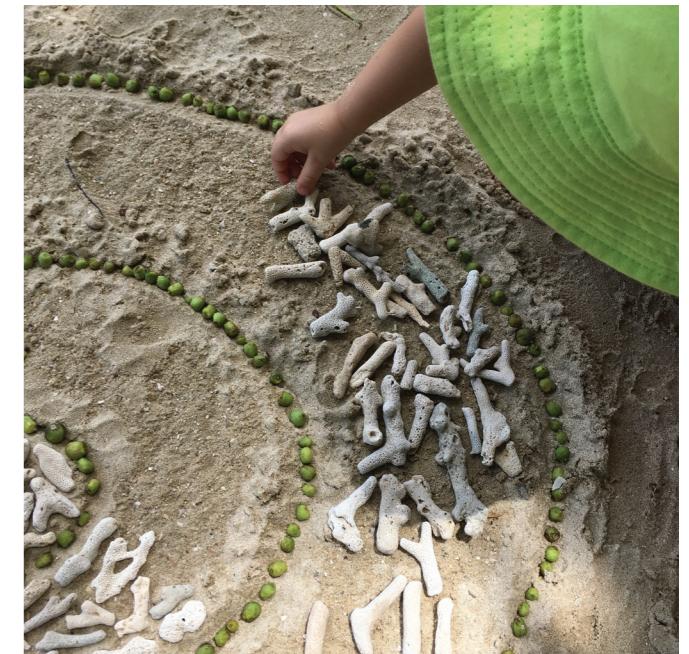
He scavenged for his 'homes' nearby resources, and found fallen seed pods from trees, washed up pieces of old corals, and smooth sea pebbles.

He began placing the seed pods within the grooves of the spiral. In a nod to his homeland he began putting the coral pieces within the spiral spaces in a gaudi-esque style.

He finished the piece with its inhabitant snail, filled with pebbles.

Entitled Cargol, the temporary natural art piece, was meant to consider the transient meaning of 'home.'

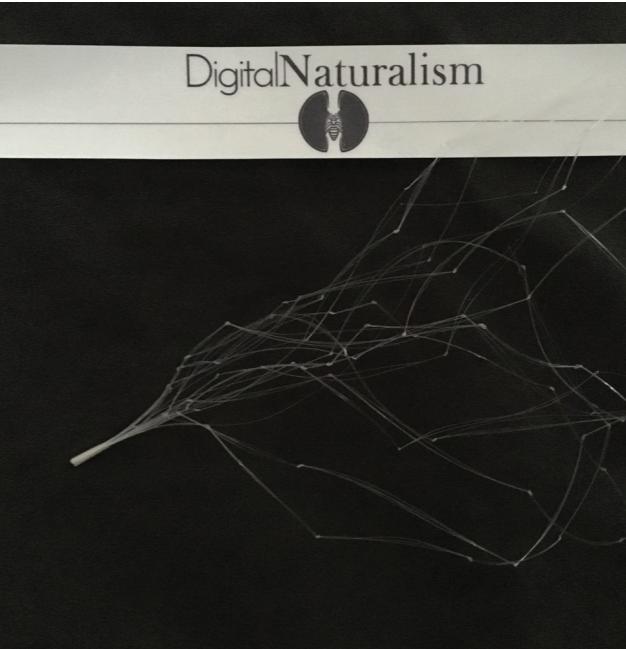
The piece remained beachside, changing colors as the pieces were weathered, wind blown and rained on.



BIOLUMINESCENCE TEXTILE

Elizabeth Bigger

An unplanned and rapid experiment resulted from an evening of swimming with the Dinacon group in the bio-luminescent waters. Wondering if it was possible to bring the glow of the dinoflagellates into a textile, I mocked up a sample using fiber optic threads and natural wool roving.



Using .25 mm fiber optic threads I tied knots in various locations of the thread strands to create the points of light, or “dinoflagellates.” Some used 2, 3, 4, or 5 strands and then knotted for size variation, in an attempt to create depth within the look of the textile.

I used 100% natural wool roving, which was torn into small pieces and laid out into the sample rectangle shapes in a criss-cross fashion, alternating directions in the classic style of felt creation. I made two of these wool pieces, each with 5+ layers of roving pieces.

The fiber optic stands were then gathered at one end and bound, and then I placed the bundle of fiber optic “dinoflagellates” on one layer of the wool sample, spreading the fiber optic threads out to cover the full area of the wool. Then I placed the second roving sample on top the fiber optics, sandwiching the fibers between the two wool pieces.

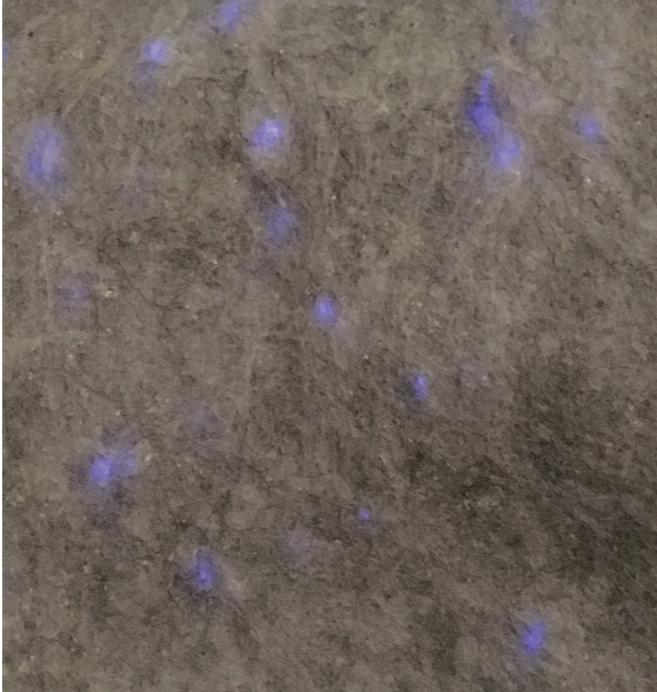
This was then stamped on by my assistant to begin felting and then placed into a undergarment laundry bag to be fully massaged by the sea.



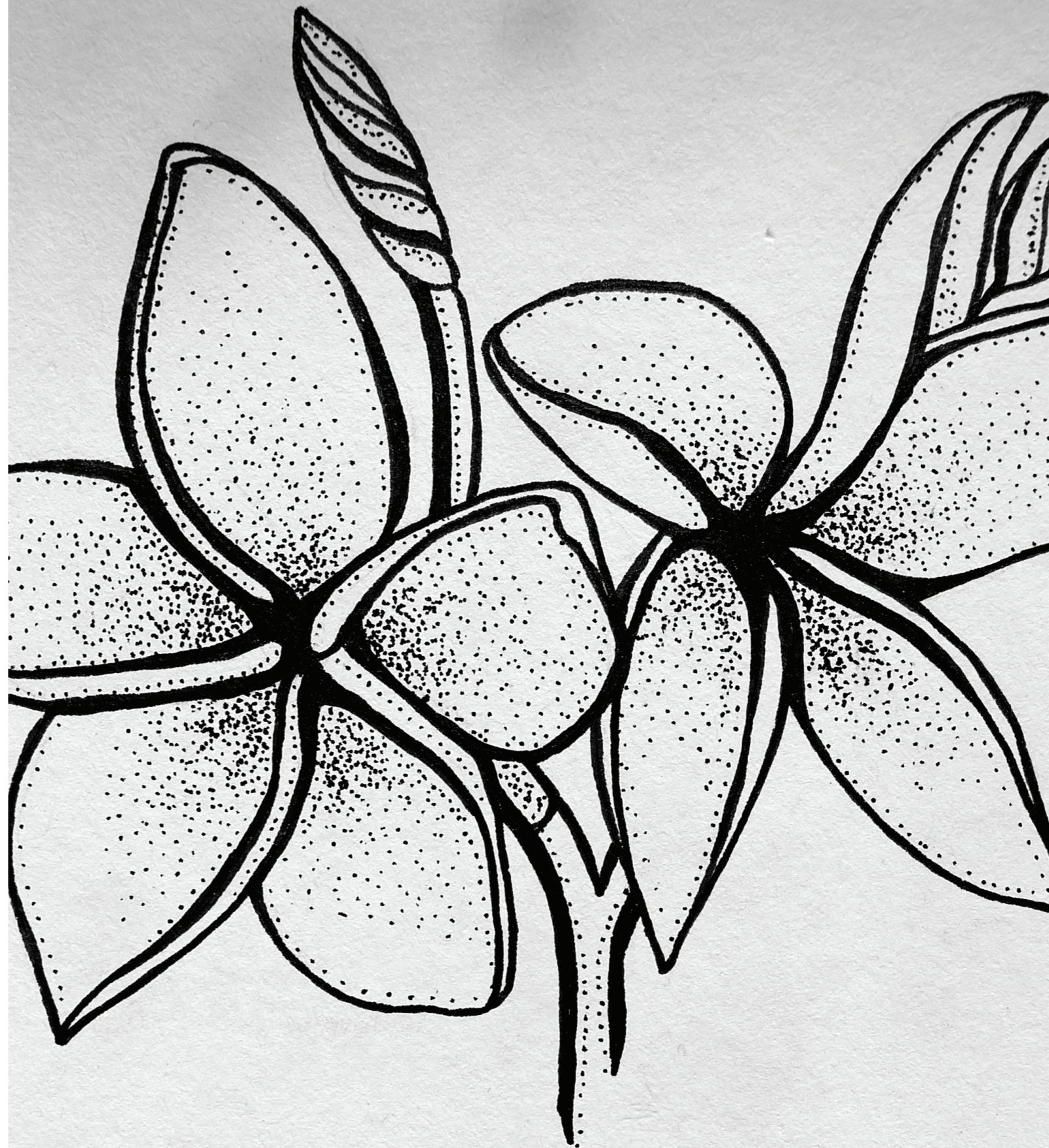


The felting process was completed by the washing in the sea, with non-toxic dish soap and the waves pounding on the wool fibers. I rung out the textile and then hung it over a nearby tree branch to dry in the sun.

We tested the textile that night by plugging it into our LED dongle, and the textile illuminated, making a quick sample of a super soft bio-luminescence textile.

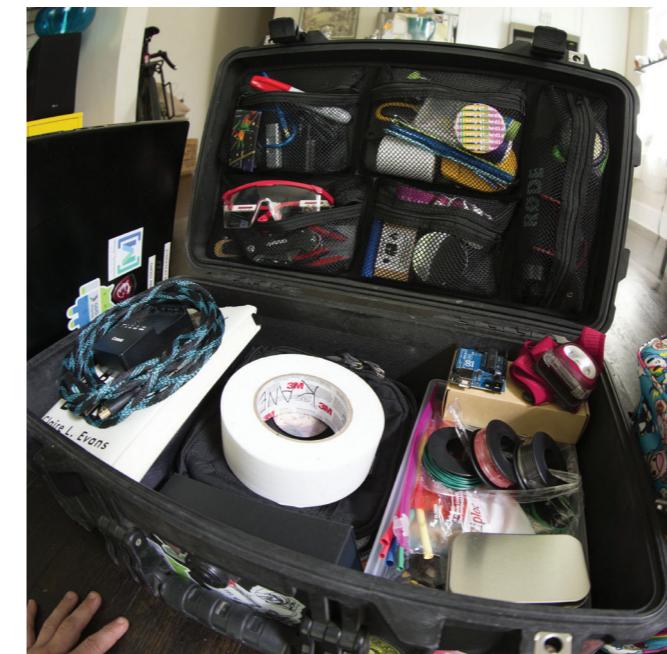


Frangipani- by Mari Crook



RECYCLOOM

Recycled Textile Loom
Maggie Kane

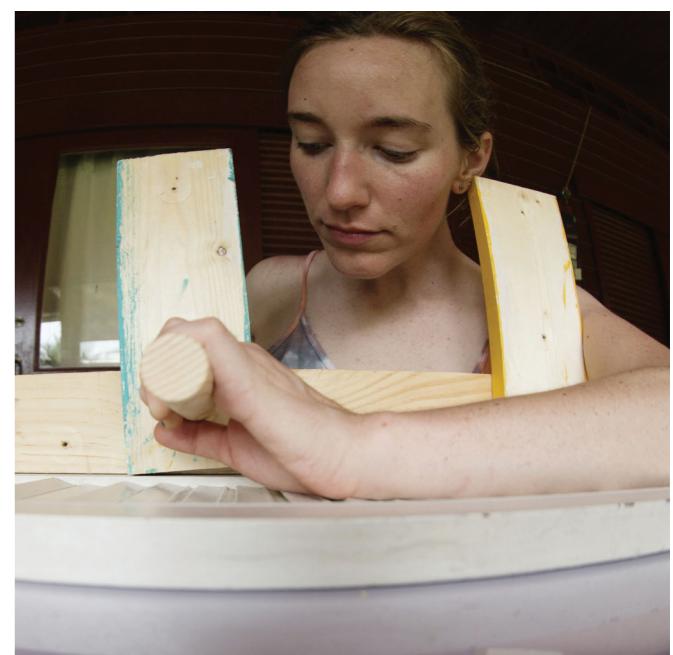


In early summer 2017, Streetcat (<https://www.streetcat.media/>) participated as a node leader for the inaugural Digital Naturalism Conference (or DiNaCon), hosted by Dr. Andrew Quitmeyer and Tasneem Khan in Phuket, Thailand. Streetcat applied her project idea - the Recycloom ~ in during the call for proposals for DiNaCon in early 2018. Her project idea encompassed building a textile tool that was made from recycled materials and utilized recycled plastics as string for making reused textile objects.

The final design for the loom came from a workshop that Streetcat took in early May 2018 at the Southeastern Fiber Arts Alliance where she built a strap on an inkle loom. The construction of the inkle loom is pretty simple, and Streetcat was able to source all the materials needed to remake it from various places like dumpsters, old wood-working projects, and Home Depot.

Before leaving for Thailand, Streetcat practiced making straps on an inkle loom that she borrowed from SEFAA, made a bunch of plarn, and constructed / deconstructed and packed the recycled loom ~ the Recycloom! ~ for the conference!

At the conference, Streetcat delirious-



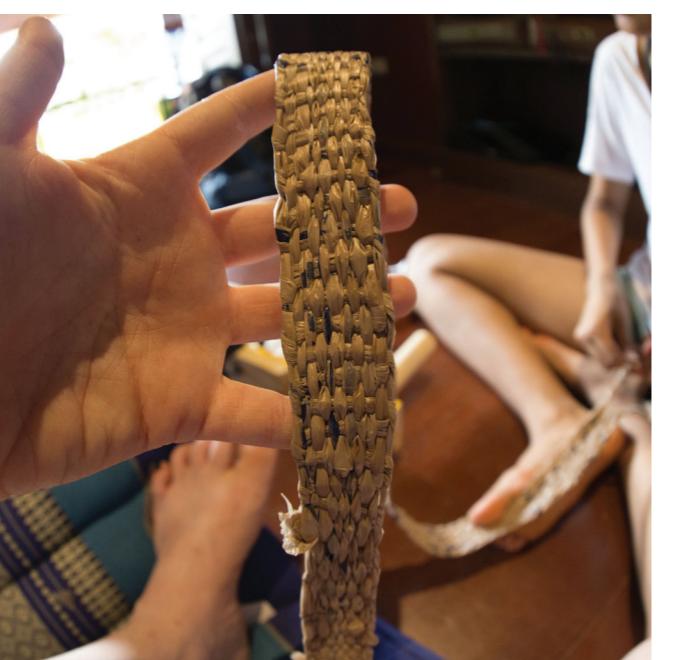


ly reconstructed the recycloom right after arriving at the conference from a 27 hour travel period from Atlanta to Phuket. There, she started experimenting with several stringing methods on the recycloom to play around with making straps out of cotton string and plarn. After working through a few projects, she started to teach other conference attendees how to use the loom with showing them: what the heck warp + weft means, how to make a shuttle out of cardboard, how to string the loom with plarn, how to make a patterned strap, and how to start/finish a project.

The loom lived on after DiNaCon by being adopted by Tasneem Khan and the Diva makerspace ship!

Check out more info about the project:
+ <https://www.streetcat.media/creative-tech/recycloom>

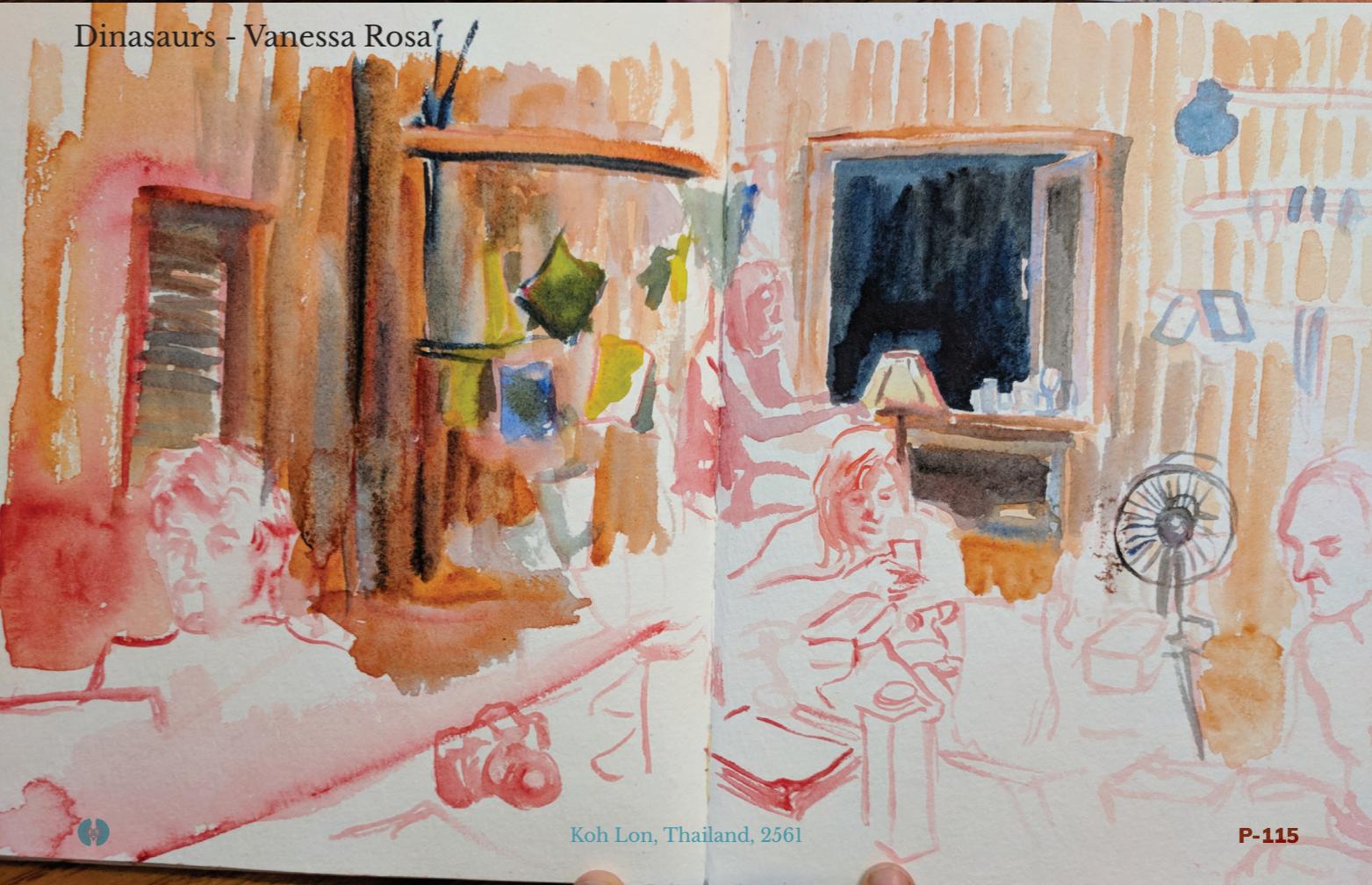
+ <https://www.dinacon.org/2018/01/12/maggie-kane/>



Diva Watercolor - Vanessa Rosa



Dinosaurs - Vanessa Rosa



Koh Lon, Thailand, 2561

CROCHETEERING

Hannah Perner-Wilson

+C, KOBAKANT

A tale of fishy innovation

I wanted to build myself wearable studio gear that will allow me to go into the ocean to spend time there fishing for materials, diving for details, weaving with water and etching salty circuits in my datasheet-swimwear.



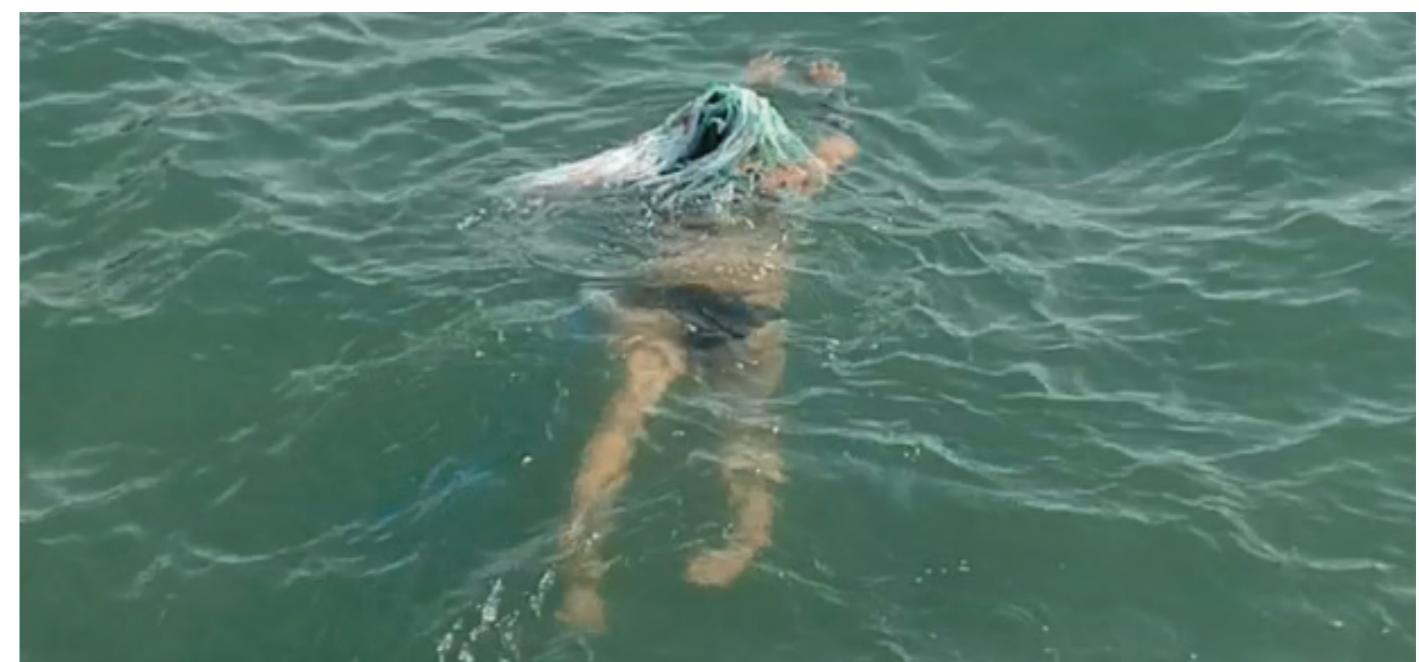
Photo by Umeed Mistry

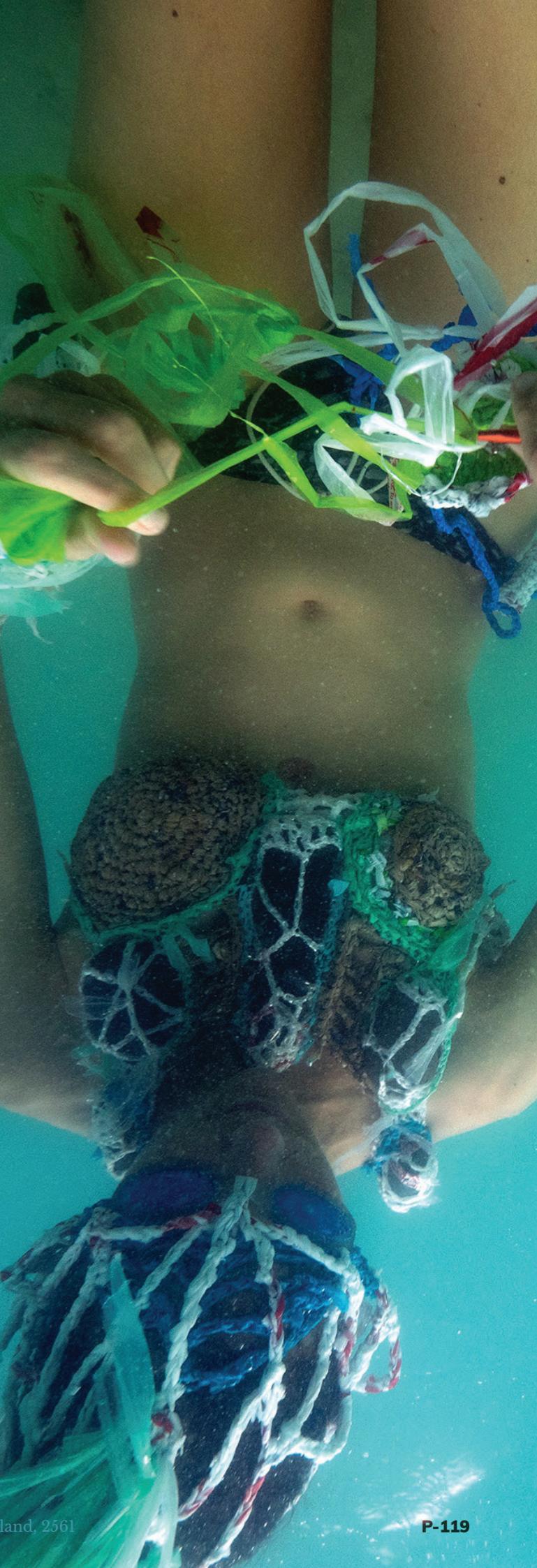
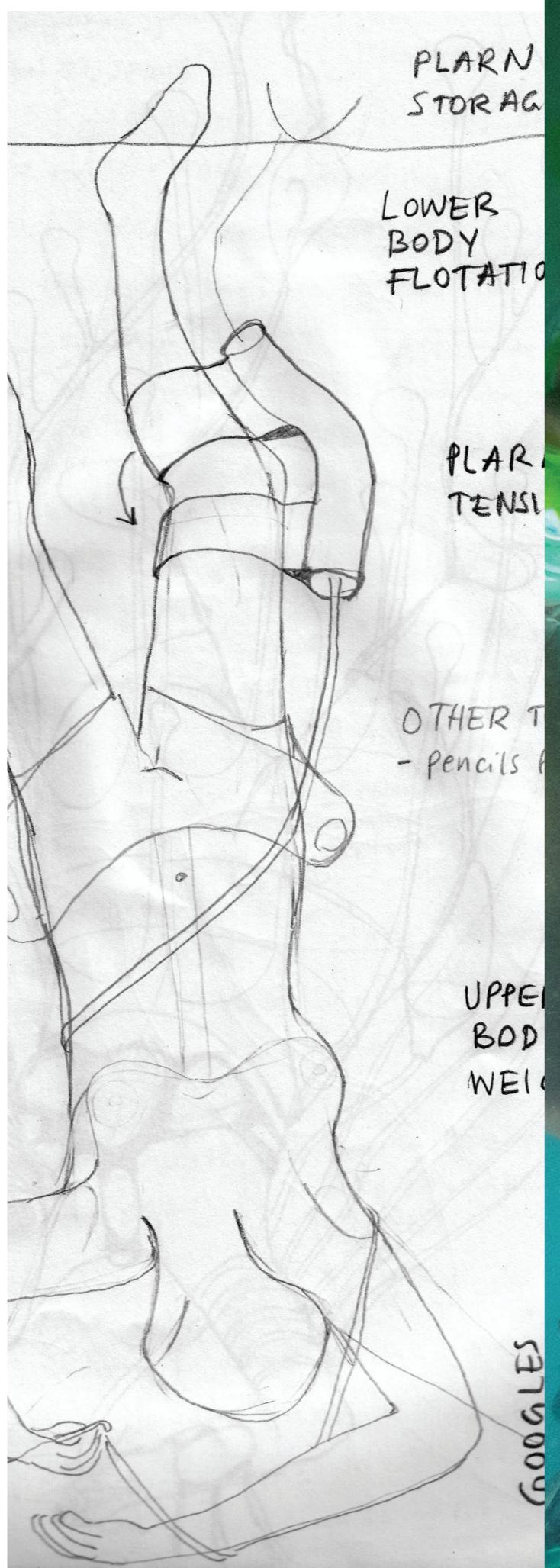
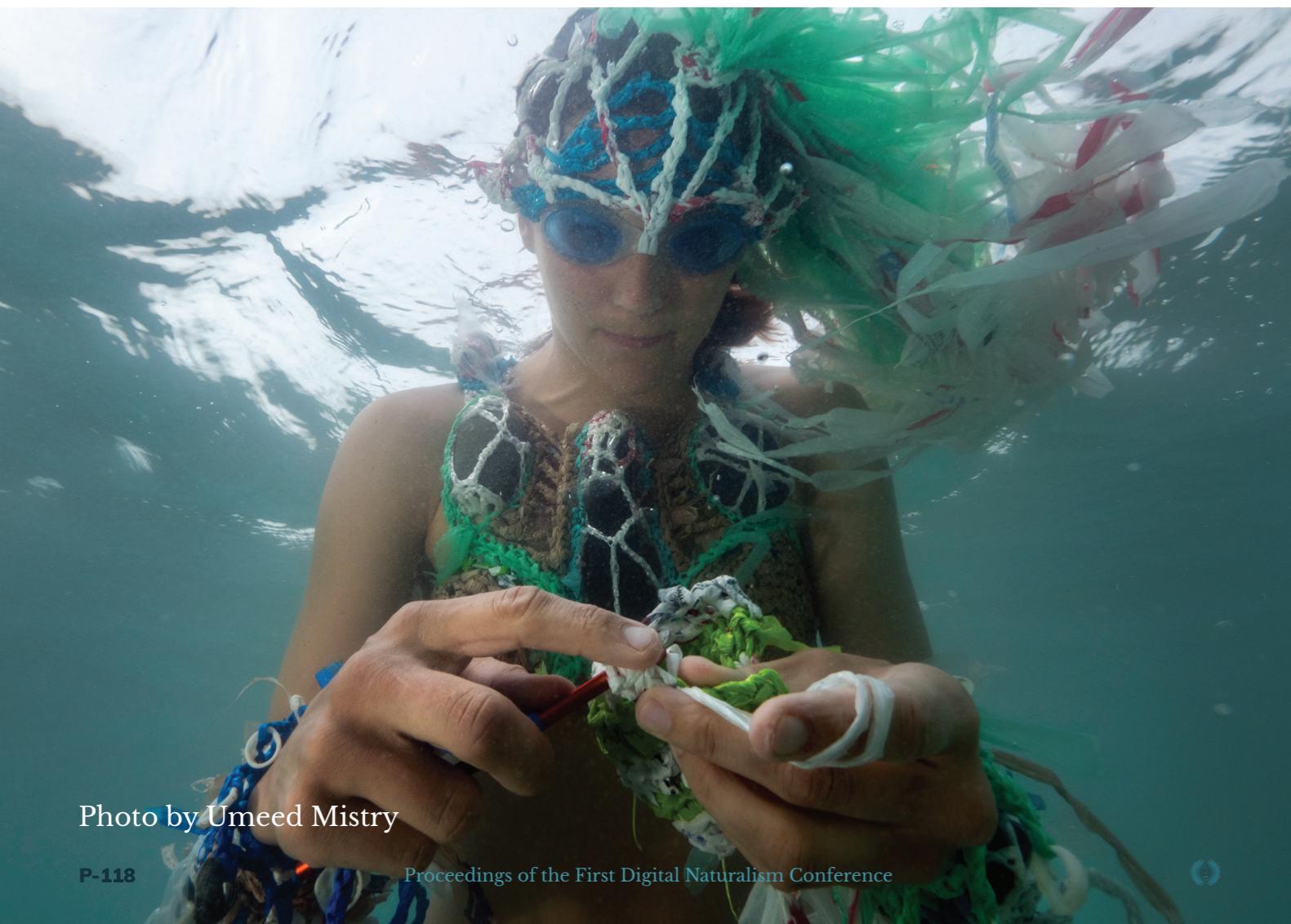
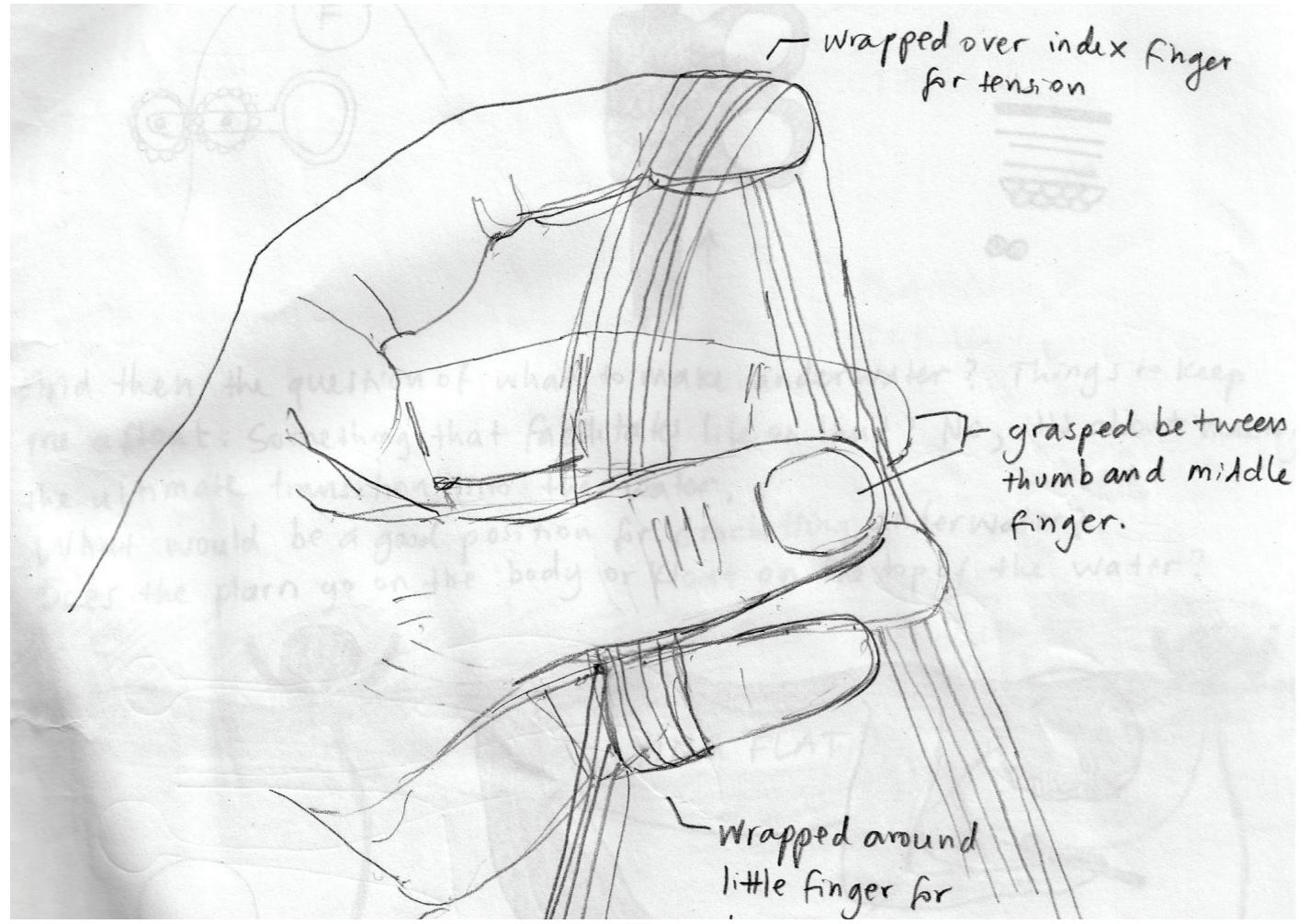
By trying to realize this unlikely combination of moving to stay afloat while moving to make, I want to see if I can dive deeper into the experience of what it means to be able to “make while moving through the world”.

Precisely because this endeavor may sound silly, it appeals to me. I have hopes that by distancing myself from reason – in this case “reasonable modes of making” – I can create an opening in the fabric of optimized experience to slip through and experience the other side. Looking back at our lives shaped by optimized experience I might catch a glimpse of something one can only see from underwater.

This work is a continuation of my Wearable Studio Practice, a project I started after returning from an expedition with Andy in Madagascar in 2015. Since then I’m becoming ever more interested in applying my skills as an e-textile craftsperson to explore “making as a means of experiencing the world”.

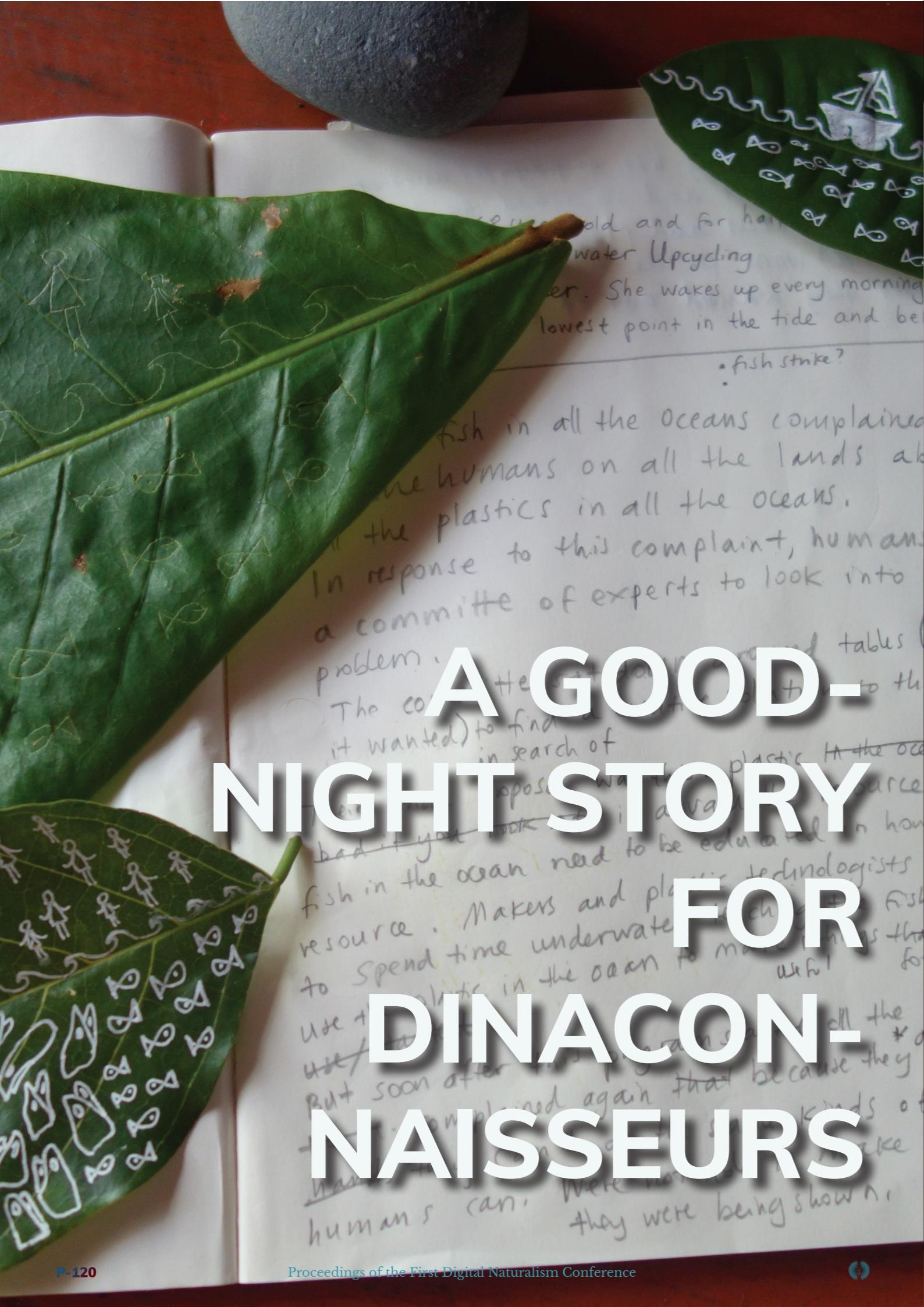
When I arrived and began going underwater to crochet and (thanks to Kit) discovered plarn, this practice lead me to write a story about ocean plastic as the result of our human ability to make.





A GOOD-NIGHT STORY FOR DINACON-NAISSEURS

humans can... they were being shown



An Underwater Studio Practice A Goodnight Story for DiNaConnaisseurs

One day all the fish in all the oceans complained to all the humans on all the lands about all the plastic in all the oceans.

The humans were upset by this complaint because although they had been suspecting for some time that all their plastic ending up in all the oceans was not a good thing, they had not done anything about it. The humans told the fish their complaint was unwarranted and continued to ignore a fact.

The fish told the humans that they would result to drastic measures and threatened with bio-terrorism. Their equivalent of suicide bombing would mean swarms of fish would swim to highly toxic waters to intoxicate themselves with pollution that would travel all the way up the food-chain to kill 'innocent' humans.

This posed a serious threat that the humans could not choose to ignore. A committee was voted into action. This committee met for several weeks to come up with a very creative solution. And this was their conclusion:

Plastic is in fact a valuable resource and the fish have not been able to recognise this. Humans must educate fish on how they can use this resource to their own benefit.

As part of this Fish Plastics Education Act, makers and plastics technologists were recruited to go ^{top} underwater and teach the fish how to make useful things from the plastics in their oceans.

After only a few months of running this programme it was deemed a huge success. The fish were thrilled by all the possibilities available to them and had many ideas for 'upcycling' the plastics in their oceans. But there was a problem, the fish were not able to make the things the humans were showing them themselves. Without hands and big enough brains, they could not man the machines or manipulate the materials.

The human answer to this dilemma was to hire a full-time crew of professional makers to spend their days underwater making whatever the fish told them to out of plastic.

-2-

Chapter 2: The FPEA

Implementing the Fish Plastic Education Act was a huge undertaking that required all the humans ^{in all the lands} to cooperate. Although lands in which little or no fish were part of the traditional diet were reluctant to make as much effort.

Shortly after signing the Act, the trans-national Fish Plastic Education Association was founded and began recruiting makers all over the world. These makers put together a catalog of designs that could be made from the plastic in the oceans.

The catalog was printed on recycled ocean plastic paper and posted in every body of water.

The orders division of the FPEA began taking orders right away and makers all over the world were put to work to fulfil these orders.

While the first edition of the order catalog contained designs for custom 3D printed prostheses, sports equipment and educational games, it was soon updated with designs based on what the fish were actually ordering. More than 90% of all orders were for fashion items - clothing and accessories.

- 3 -

Among the first most popular trends were stripy tank tops and cuttlefish skirts, crochet from

Plarn - a yarn made from discarded plastic bags.

Especially in coastal regions with high fish populations the FPEA began recruiting large numbers of crochetteers to fulfil these orders.

Crochetteers, as they called themselves, established a whole new profession around the craft of crochet plarn fashion. Quickly moving on from stripy vests to high-tech wearables, and PE-Textiles (Plastic Electronic Textiles).

- 4 -

Chapter 3: Crochetteering

Fish, it turned out, were much more tech-savvy than humans. Within only a few years every fish in the ocean was a digital native. As a collective super-organism, fish were the first to adopt ocean-wide wearable technology which they used primarily for data collection. Just like everything else that they depend on in their lives, the data they collected, belonged to The Ocean. The Ocean accumulated this data and every fish had unrestricted access so that they could know the effects of their behavior on their ecosystem.

Crochetteers were at the forefront of developing these underwater wearable technologies and the first makers to fully comply with the fish's demand for a zero waste, fully circular innovation process. 'Crochetteering' became the term used to describe this holistic techno-craft invention process that only considers solutions that solve for the Whole Earth Equation (WEE) with a timefactor* of <5 years. This means that every design in the Ocean Plastic Design Catalog has its full life-cycle planned in ahead. Resources remain resources. Waste becomes obsolete.

- 5 -

Chapter 4: Fishy Factors

Crochetteering's success relied on some fishy factors. These became more apparent, the harder humans tried (and failed) to replicate crochetteering's success for themselves.

Most notable of these factors was the fishs' concept of The Ocean - their inability to perceive themselves as individual entities, separate from their habitat, and their inability to comprehend the concept of waste - proved impossible for humans to replicate.

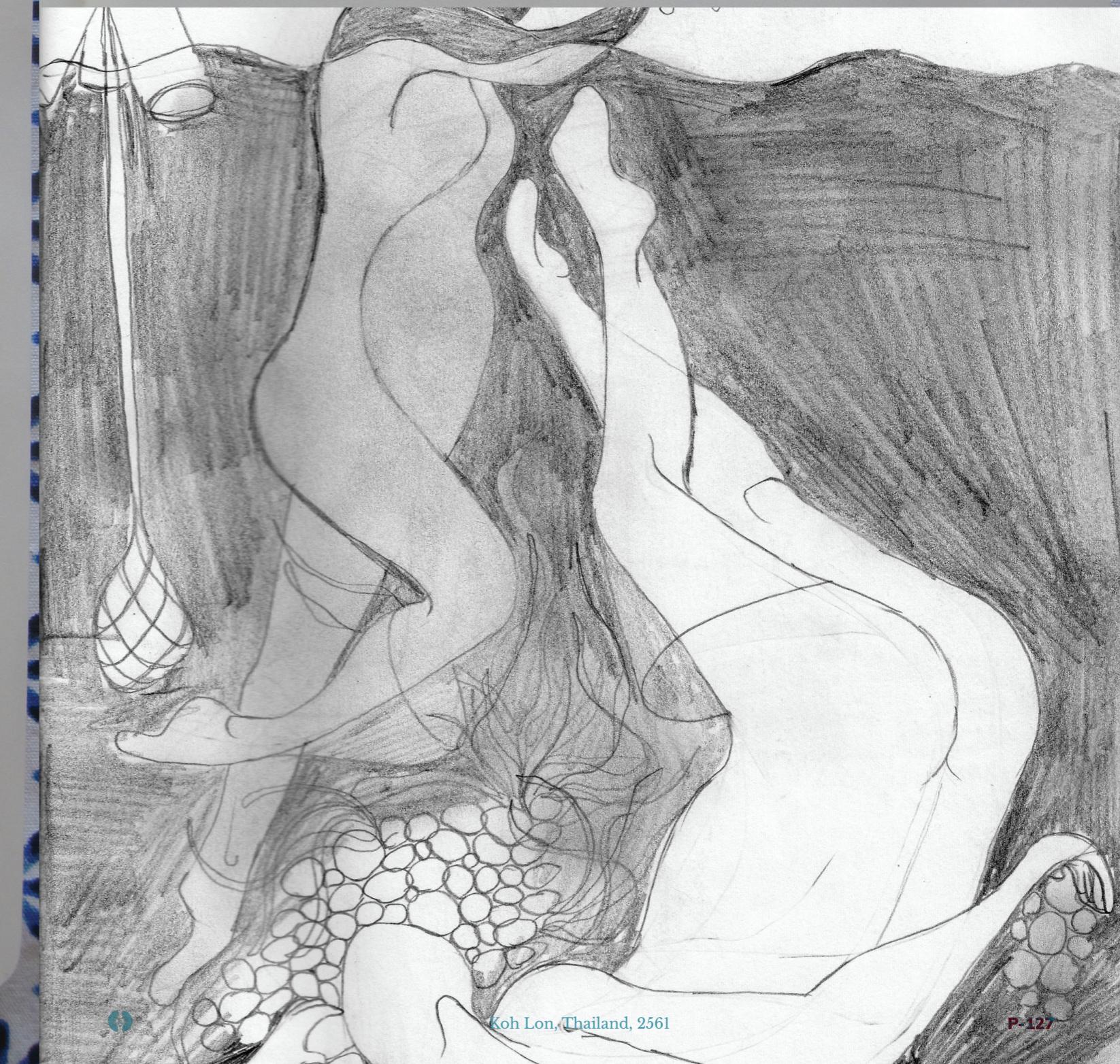
In attempts to attain such fishy states of mind, humans tried many things. Some modified their genes, few went to live among them, many studied them intensely. But to this date humans have not been successful in evolving their individuality back into a superorganismic state of mind.

With over $\frac{1}{3}$ of the world's human population now employed by the FPEA, global production of plastics has decreased by more than half, simply because makers are so busy making and remaking ocean plastic designs for fish that they don't have time to make for humans.

While the majority of makers employed by the FPEA state they are happy living out their lives in service of the fish, there has

- 6 -

recently been a increase in makers asking "What Next?" - must humans remain subservant to other life-forms in order to fulfil their role in the Whole Earth Equation?



May
31

BOAT DAY



IMMERSEA

Oya Damla, Kira deCoudres, Adam Zaretsky, Ryan Cotham

ImmerSea: Subversive Submersibles is water-adapted augmented reality (AR).

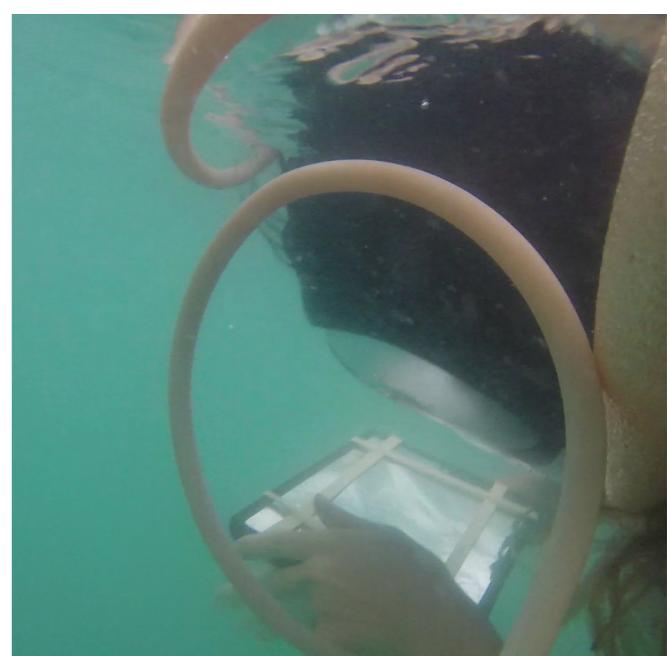
Abstract - ImmerSea: Subversive Submersibles is water-adapted augmented reality (AR). This included aquatic AR goggles, immersive AR environments and AR submergibles.

ImmerSea: Subversive Submersibles are installation experimentations involving creative real time superimposition of re-mashed audio visual overlays onto everyday audio-visual and other sense data for experience alteration and tabulation of reactions. The experiments focused on (1) Eye Candy Disruptors, (2) EcoSensual Synesthesia and (3) Gamification of Risk. Centered around our pop-up sustainable miniature golf course, we designed transmissions and communicated odd augmentations to our immersed and submerged co-artists in the Andaman Sea.

We had wonderful experiences doubling our sound and vision under the sea. Kira, Oya, Adam and Ryan formed a temporary collective of multimedia artists, bioartists, psycho-geographers, biologists and free thinkers who collaborated in the ImmerSea: Subversive Submersibles node at the Digital Naturalism Conference. We manipulated live feed footage from environmental settings. We designed and built submerged interactive/immersive sound and video wearables for architecturally encasing art installations using site specific sonic and tactile sources. We ran experiments in psychological experience and altered states of semi-consciousness. We dedicated our time on the island to rugged prototyping allowing for flexibility that utilized the ready-made technics we brought, borrowed and found. We incorporated naturally occurring sounds found in the acoustic environment of Koh Lon and build them into our novel device laden suits.

In the mists of a lush tropical island environment, we composed six channel, 'real' surround sound for zorb ball immersive experiences and Video Jockey creative misuse of AR software explorations for a hand crafted underwater iPad floatie suit. We detuned, crashed out and mashed up with our sound art, performance art and mad interdisciplinary sciart skillz in the DinaCon Cone of Tropical Geekdom (DCCTG). Underscoring our critical quandary into behavioral, cognitive and queer studies, while relying on our own brand of fringe philosophy, we unpack for you here our experimental designs and the resultant psychoacoustic/psycho-geographical analysis of augmented underwater experience.

Yes, we designed submerged aquatic AR environments and underwater AR submergible wearables. ImmerSea: Subversive Submersibles made installations of DIY bio-body art experimentation by building mediated exoskeletons and getting in them, in the water. We were receiving creative, real-time and





re-mashed audiovisual overlays while in and on the sea. We had that experience of alteration that mocks, and yet joins in, screen hypnosis through gadget love/hate relations. In this field report we include our own qualitative tabulation of reactions from the audio visual occlusion front of mixed reality superimposition. Working from the vantage points of artistic self-experimentation, tech-no-masochism and begrudgingly admitted tech-titillation, the following is our lab book.

What is Hydro Immersive Augmented Reality (HIAR) to Us? Augmented Reality is a super-imposition of digital media onto the natural world for artificial intimacy. We study Computer aided User Deprogramming Experience (UDX) as well as push-advertisement styled media coercion. Is immersion in the sea a way towards more easily abscessed critique of a common mass obsession? Due to the changing state of the aqueous mind, an undersea, layered-on, disruptor of immersive relaxation may be the ticket towards a reveal of the prosthesis between the blinds of both inner and outer worlds. In other words, we theorize that Underwater AR may provide evidence of cognitive glitch implicit in consciousness (i.e. equating the needless stressor blow out anomie to the thrill of mediated stim seduction excess). Does the fall of alienation through a leisurely addition of social entertainment screens open us to gamified virtual

vacation communication as utter surrender?

"We lived once in a world where the realm of the imaginary was governed by the mirror, by dividing one into two, by theatre, by otherness and alienation. Today that realm is the realm of the screen, of interfaces and duplication, of continuity and networks. All our machines are screens, and the interactivity of humans has been replaced by the interactivity of screens.

...
We draw ever closer to the surface of the screen; our gaze is, as it were, strewn across the image. We no longer have the spectator's distance from the stage -- all theatrical conventions are gone. That we fall so easily into the screen's coma of the imagination is due to the fact that the screen presents a perpetual void that we are invited to fill. Proxemics of images: promiscuity of images: tactile pornography of images. Yet the image is always light years away. It is invariably a tele-image -- an image located at a very special kind of distance which can only be described as unbridgeable by the body.

...
There is no ambiguity in the traditional relationship between man and machine: the worker is always, in a way, a stranger to the machine he operates, and alienated by it. But at least he retains the precious status of alienated man. The new technologies, with their new machines,

new images and interactive screens, do not alienate me. Rather, they form an integrated circuit with me."

- From Xerox and Infinity, Jean Baudrillard / Translated by James Benedict This essay was originally published as part of Jean Baudrillard's "La transparence du mal: Essai sur les phénomènes extrêmes" (1990), translated into English in 1993 as "The Transparency of Evil: Essays on Extreme Phenomena", http://insomnia.ac/essays/xerox_and_infinity/ (footnote numbers / what citation style is preferred?)

That the near entirety of living human animal populations could be bought off so succinctly with a two thumbed, LCD touch sensitive, tool-being hand to eye sized bauble that bleeps intermittent rewards is a tribute to the era of Homo Rechargerus and the addictive nature of conditioning. Regardless of however trite the reward (the bleep for bleep's sake or the glow brightness itself as iHearth), regardless how onerous the odds, regardless of how guaranteed the eventual amnesiac economy of loss, this is tech that offers satiation on the installment plan and hence satisfaction for many. Simply by cataloging the percentage of time spent recharging our handhelds we can tabulate the incremental toll, the hemorrhagic loss of service that our screens take. The moth-like to the light of the screen identity is a relic of the TV years. Identity has now gone beyond the CRT beam hook into the infinite line of LCD glow scrolling (touch sensitive screen) and the audio intermittent reward of Pavlovian ring tones and alerts. The 'you've got mail' instaSnap Limited Interactivity Extended Reality (ISLIXR) of AR superimposition is the clicker training of the commons.

How and Why are We Using AR? This project engages with topics of behavioral immersion by connecting environmental and experiential bio-data-tics across human, animal, and technological populations. Here, media manipulation serves to make post-environmental and

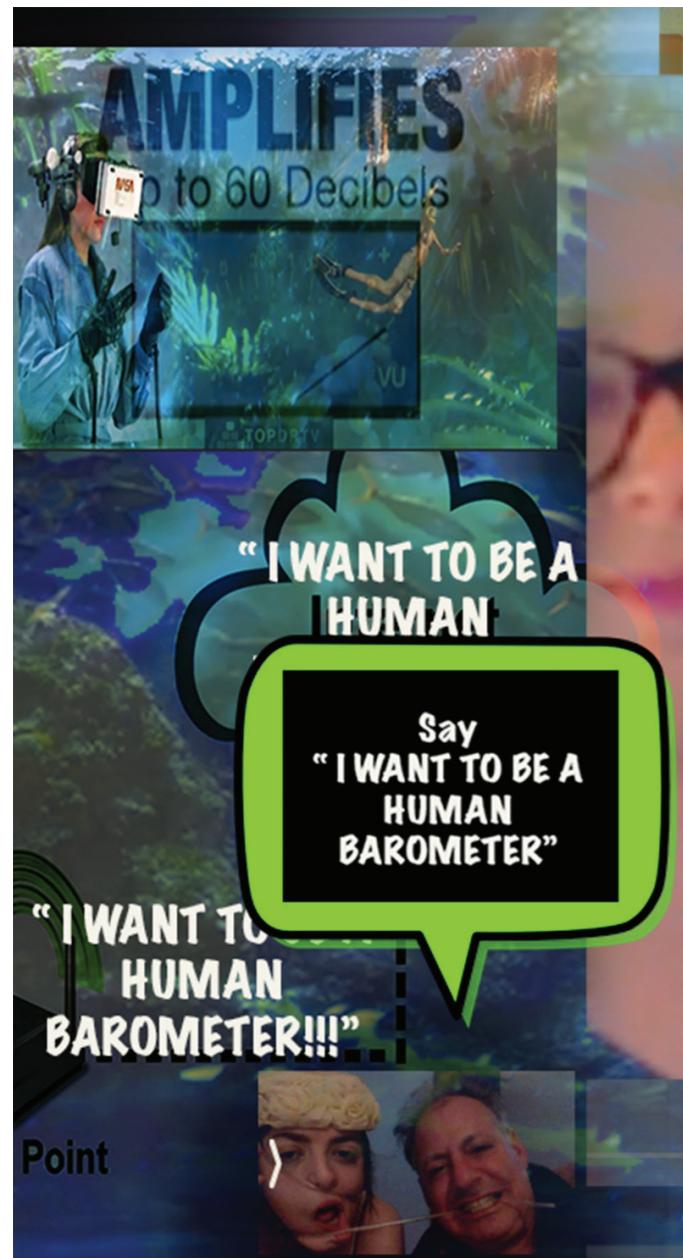
post-biological post-truth information experientially available, stimulating curiosity and interest previously inaccessible to post-programmed populations (the human, post-human and a-human organic masses). Initializing User Deprogramming Experience (UDX) for Mashup Remix Mixed Reality (MRMR), we present third or fourth level irony in a time where Kitsch has fallen flat. The layers of bullshit detectable have upped the delayed ante up on Critique. We are still trying to favor pop-regurg-a-purge hypnagogic options to standard immersion. Into which product orientation seminars shall we build satire? What exactly has been left un-gamified? What target has the naturalism to uncover, to reveal, as opposed to make appear less world wide cobwebby?

Our three experimental designs are titled: Eye Candy Disruptor, EcoSensual Synesthesia and Gamification of Risk. This report includes the materials, methods and results of these three experiments. It is our hope, in the spirit of the Digital Naturalism Open Source Public Lab Aesthetics (DINAOSPLA), that the art over data ratio (A/d) will be equal or greater than one. This is of course plus or minus a 3% negsanguineously margin of error for the duration of our unstill life studies.

Immersea Experiment One: Eye Candy Disruptors

Experiment One: Eye Candy Disruptor Goals: Through the mediatization of audiovisual fields with Live VJ Blipvert AR in a wearable AR snorkeling suit, we monitor Exposure Therapy to virtual/physical superimposition. The attempt to approach some semblance of mediated saturation, beyond both utility and entertainment was our goal. We were able to modulate variables of visual time alterity and applied repetition media regimes. This confirms with our intention to study the effects of the artistic taking over of the augmented visual and audio field with more Crap than is already available while swimming in the open sea.

Materials: DIY Water Proof iPad, wear-



able AR snorkeling suit

Methods: Much of our 'data' is based on pre-present & post surveys of human performance volunteers focusing on Annoyance, Habituation and Recall as quantitative, qualitative and catatonicative data sets. Qualitatively, we used an all-orificial data set including questionnaires for tabulation. This entails a synopsis of amalgamated qualitative data from all 11-13 of the major collection points or body portals of our voluntary human arts subjects. This survey data was compared to motion analysis of body language tracking video documentation. Use of binaural new age meditation audio with 31% translucent clouds as a control was meant to approximate degree zero samsara experiential authenticity in order to compare the subject reactions



to experiential, repetitive, strobic, vapor-wavicle, remash noise ratios.

Results:

People had fun! People clamored to be inside the contraption. People craved to swim with a screen in their face, to snorkel in the most lovely sea while looking through a busily augmented screen full of touch sensitive 3d emojis and first person zombies to shoot and three dimensional glitter drawings tracked by space and head movement. The idea was that snorkeling through schools of fish or peeking at anemones in coral reefs would be reason enough to dispose of the screen. We were wrong, most people want to augment and peer through the screen as often as they can. Instead of non-virtual fidelity, celibate edutainment is the norm.

Future Research: We hope future experiments will include real-time monitored reactions to live blipvert wireless VJ remashed madvertisments. Superimpose motion tracked data collection with specific experimental brain wave stimulating binaural-sextanural new age automated samsara control variables, and we may score that mind control research grant we always dreamed of. The plan for now is to expand our repertoire into a wider manipulative media range through: percentage of audiovisual augmentation (loudness and field of superimposed vision), speed of editing-jumpcutting, strobic/distorted sonic and signal to

noise ratios. should be automated to increase whole brain de-synchronicity and imprint vulnerability. We are still looking for something like real-time giphy world

3D sculpt brush AR jockey software for beaming real time to others in the underwater AR screen spectator faceplant worlding. Perhaps that is something we could seek collaboration for building.

Immersea Experiment Two: EcoSensual Synesthesia

Goals: We are focused on smell, taste, CNS nerve stimulating (touch) and proprioception for this experiment. We created an inhabitable instrument--the semi-submerged wireless human augmented reality zorb ball interface (See image + caption) -- to measure sonic arousal in a spherical 360 degree sextanural sound space.

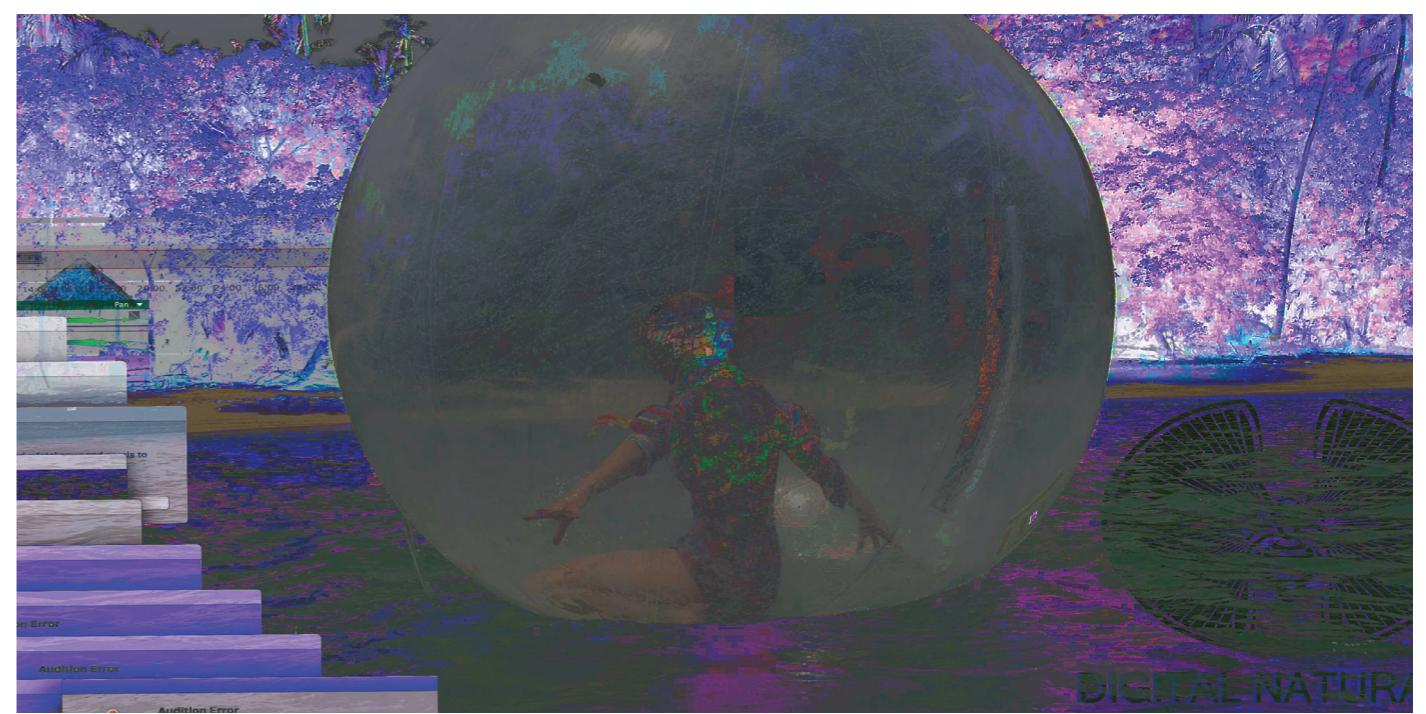
Materials:

We created an inhabitable instrument -- the semi-submerged wireless human augmented reality sextanural zorb ball interface. This included a zorb ball and six waterproof portable MP3 players with six MicroSD cards synched to play our six channel compositions. We composed several six track digital audio compositions. These included six tracks to 6 speakers in the Zorb Ball (Front, Back, Up, Down, Left, Right), as well as experimenting with binaural standing waves in full six channel dimensionality (hence

sextanural sonic space) in a closed and yet N degree of cognitive freedom user movable space.

Methods:

In order to transmit the sensual sounds of the island into a semi-submerged human augmented reality zorb ball interface we positioned the waterproof speakers: fore, aft, port, starboard, stern and bow. The six channel sonic compositions are available online mixed and as original six directionally distinct tracks. Made from generated, remashed and digital audio field recordings from the Koh Lon local island ecosphere soundscapes. You can try this yourself! "Music For Zorb Balls" is the result of a Digital Naturalism Conference Project, ImmerSea: Subversive Submersibles. An experiment in sext-o-phonic sound (6-channel 3D omni-directional audio), "Music for Zorb Balls" documents audio tracks created for an immersive media-tastic soundscape while in an inflatable bubble on water. For our purposes, we assigned each directional track to six separate wireless Bluetooth speakers attached to points inside the Zorb ball. The audio can be streamed through any audio-playing device: iPhones, iPods, iPads, IAmASpeaker, Car Stereo Speakers, etc. Try duct taping pillows to friends and slipping their phones on loop into the pillow cases and then modern dance moshing with them



DIGITAL NATURA

while connected to their feet and hands with industrial rubber bands. This may give you the interactive UDX experience that it takes to feel the interface.

The album is free for public access and includes each artist's contribution to the interactive sound installation. For public replication of this experiment, download each directionally determined track and assign each to individual speaker outputs for the best, most disorienting experience.

To download the full album from Bandcamp, select "Buy the Full Digital Album" but rest assured, the album and all tracks are free! Name your price at \$0 (or more!). To download only specific tracks from the album, select the track(s) of choice and select "Buy Digital Track".

FREE. Enjoy!
<https://immerseadinacon.bandcamp.com/album/music-for-zorb-balls>
The system of zorb-bodies conformed to the human hamster wheel XYZ audio architecture simplot. Our research subjects were floating spherical on the waves of an immersive interface. This six channel Zorb space is semi submerged with user controlled motion and multi sense intensities. This is implicit in most full immersion media heavy, seafaring globes of transparent inhabitation. Our interest in binaural sounds stemmed directly from researching the CIA funded Monroe Institute declassified documents.

Results:

"Being a primary experiment subject contained within the Zorb Ball fulfilled many fetal fantasies of being inside of a techNO-FEAR PROTECTO-SPHERE. Surprisingly, this enclosed experience externalized dissociation in a most dreamy, oxygen-deprived way. The sun beaming down on the Andaman Sea quickly steamed the dream bubble, creating a sauna effect. This, coupled with sonic bombardment from all directions (up, down, left, right, front, back) was immediately disorienting and yet, caphophonously comforting due to cultural

familiarity with over-commercialization of experience. It was a clumsy kinetic learning-curve to walk on water, with big Jesus-like footsteps to fill. This tumbling was quite entertaining and meditatively exhausting due to the amount of energy exertion required to move an immeasurable amount in any direction. This cyclical going-nowhere and treading on water must be what hamsters and laborers trapped in capitalist loops feel like. In conclusion, this inverse rebirth was enlightening and recommended for anyone in search of an affixatingly intense psychophysical re-alignment through mediated reprogramming."

– Kira deCoudres.

Future Research: We would like to experiment with waterproof, six channel, acoustic contact microphones that use streaming wifi. Live streaming from six sonic on-ground (or hydrophonic 'in-water') contact sites of interest would be fun and analog enough to have a warming mediation effect. With the right psychogeographically positioned field station, we could include instrumentation used to collect data that measures arousal, (for instance, a penile or clitoral plethysmograph, a electromyograph for rythym contraction data, Doppler velocimetry penis cuff/sleeve, etc). But there is a limit to the measurement devices available for five kingdoms wide, cross species real time arousal. These interspecies types of inclusive all-phylum arousal economies of fetish measurement devices can be prescient techno-predictors of both the chemistry and early reporter weather predictions . Orgonomic coefficients coincident with ecological forecasting may yet prove that incorporating the sensual psychophysiology arts into climate change studies is a novel use value for our currently sparse interspecies, Kinsey-esque, sexual response data and... correlated to climate change... we have even more reasons to cum .

Immersea Experiment Three: Gamification of Risk

Goals: This experiment is about what level of virtual overtaking of the 'actual'

is possible by sudden and incremental alarming risk suggestion. We are looking at demonstrating extreme what ifs, neurotic paranoia and underwater fear factors to induce panic. This is to see if reliance on augmentation is such an addictive autopilot that users are capable of downgrading risk assessment or if danger as a concept can be subsumed by the multisensorial eye candy and responsive ISLIXR HIAR environments.

Materials: Zombie Apocalypse AR software, fake shark fin hat,fear itself and general tropical sea/mangrove/rain-forest fear mongering information sessions for players.

Methods: The intention is to compare notes on the reaction to panic attack inducing threatcasts, with or without augmented reality. Working with the generation of psychotic states or schizogenesis, we combine overlaying the audiovisual experiences of emergencies with actual dangerous or convivially able to be perceived of as dangerous environments such as the Andaman Sea. So, this is predominantly a genre of overlaid media to be explored while at risk of shark attack, drowning, unusual currents, poisonous fish, stinging jellyfish and sea gypsy pirates of the Malay Peninsula. Immersea experimental volunteers were subjected to a media barrage of: flashing lights, loud voices giving orders, mass media styled endless emergency warnings, faux shark attack and crashed, impeded glitch, audiovisual environments.

Results: Actual dangers encountered were: strong currents to nearly drown us, coconuts falling from the sky, jelly fish stinging and oxygen depletion in the Zorb ball as well as AR zombies everywhere. There was a distinct inability for the volunteers to conceptualize a difference between the Gamified Eye Candy and the emulation of mind control fascist depersonalization indoctrination cult tactics. It all seemed like an enjoyable and playful adventure, until the air started running out or the drowning feelings started. At that point, the virtual became secondary to survival, so there is still much to learn before we overcome that

urge to stay alive outside of the MRMR XR.

Future Research: The superimposition of a second, generated or algorithmically filtered version of your sense data accruement through your inborn and falsifiably inept orifice input-output economy may be safer than separating the two on competing screens (LCD/Flesh). Commercially available screens are brighter than the in-born filtered (i.e. eyes or nostrils) sense data of the everyday world. Interestingly, we found that digital LCD camera flowthrough screens that are not semi-transparent (like phones or tablets) may be of a higher bodily harm risk than mixed reality helmets or headgear. Semi-immersive gadgets are smaller, brighter, louder, more vibratory and more penile than immersive headgear or wearable environments. Comparing risk assessment artifacts and actual risk of the handheld gadget versus the wearable gadget may be worth looking into further. It does seem that any situation other than life endangering impact crashes or other forms of sudden, potentially fatal, mortal ruin are considered to be most often ignorable in or out of augmented reality. On the other hand, even long, drawn out, miserable pain itself can plausibly always be heightened by the digital.

A final Gamified Risk analysis involves the cognitive effect of the amplification of technological pain along with analog pain. This is a question of the rehabilitation of illusory meta-pain in dialogical interplay with brute force. The competition between immersive digital torment and screen based digital torment in relation to bodily (technologically unattached) torment is a Department of Defense (DoD) issue worth pursuing . Perception of risk is a fun and interesting area to analyze when comparing distinct media to the cognitive conception of the unmediated Central Nervous System (CNS). The real money is probably in how much poor risk assessment behavior can be coordinated through UDX AR MRMR DoD & ISLIXR CNS (see Terms Key below) as opposed to other kinds of

mind control in terms of fully trained assets and glitching enemy assets.

Sustainable Mini Golf

Simply as a Central Node for ImmerSea: Subversive Submersibles at Dinacon, we spearheaded the first ever Sustainable Miniature Golf Course. Nearly on the equator, this might start an equatorial fad, especially with a Biodiversity Banking Theme!

Miniature golf is great low-impact fun especially if it is sourced from local and sustainable materials. Our node hosted a social outpost made from crafted natural golf balls (baby casaba), DIY golf clubs (bamboo and brain coral and conch shells, tied together with coconut twine) and temporary redesign of loosely themed nature. Equatorial Sustainable Miniature Golf Courses are a perfect interface to teach-in about biodiversity, human gene editing and bioethics.

The ImmerSea: Subversive Submersibles Equatorial Biodiversity Bank Themed Sustainable Miniature Golf Course was a home base for our node as well as the source-mixing and wireless beaming for our remixed Immersea databank. Beginning with local Koh Lon mangrove, rainforest and coral reef biomes, this minimal impact portable eco-minigolf course houses the qualitative and quantitative ImmerSea: Subversive Submersibles library of biodiversity. The ImmerSea: Subversive Submersibles Equatorial Biodiversity Bank Themed Sustainable Miniature Golf Course is the AR-VJ immersive transmission station to our underwater ImmerSea: Subversive Submersibles Human Subjects Our video, audio, photo and written collection of ImmerSea: Subversive Submersibles biodiversity notes have been kept in a water proof lab book; notes and data available by request. We beam our tracks for output into the ImmerSea: Subversive Submersibles Biodiversity Bank Themed Sustainable Miniature Golf Library which functions as a VJ home base for UDX AR MRMR ISLIXR underwater and semi-submerged transmissions. Let's talk about how the genes for the natural excesses of exuberant traits in the

tropics might be pasted into the human genome. The Public Lab Book includes a tabulation and interpretation of Natural Excesses, Exuberant Traits and BioBanks for Future Human/Nonhuman Germline Hybrid Experiments in Human Inherited Genetic Modification. What do you think the range of possible future bodies is? Which GMO humans should be included in the Transgenic Human Genome Project (THGP)? What can the biodiversity of Koh Lon and the Andaman Sea tell us about the range of potentials, enhancements and options for future human anatomies?

Future of Artistic Research on the Interspecies Physiology of Immersive ArtSci Environments

This is an emotionally deep research process compared to the usual data recording pilot studies. Instead of using the general facial recognition software, eye tracking, blink assessment and live cortisol level monitoring (without a funding dollar spent on gestural, full embodied or any lower body orificial economy explorations), We would like to propose artistic research to amass fuller than standard physiological data spacescapings. Contiguous with our biomeditated-popsyche-ecosensual experiential developmental theme, we are striving for an all-body-portal accumulative database. Future research will include anal-tensegrity monitoring as a part of any full physiological observation of our (w)hole organism [assuming this is an organism with an anus]. Along with gene expression patterning over time (including multi generational epigenetic environmental effects) and further collection of tangible and intangible objects from our subcognitive focus groups, we intend to use AI to data mine our UX bioinformatics data swarms to provide further MRMR iterative, permutative and pseudo random artistic nodes for future studies in Artistic Research on the Interspecies Physiology of Immersive DINAOSPLA ISLIXR HIAR ArtSci Environments.

Thanks to Andy and Tasneem for all the organizational skills and joy of DINACON. We did independent DIY research and fun, wild, hacking together with resultant novel instrumentation for alternate realities. Thanks also to Pat Pataranutaporn and Werasak Surareungchai of the Freak Lab <https://freaklab.org> KMUTT for generous support and for hosting us to review, presentation and exhibition of our Artistic Research on the Interspecies Physiology of Immersive ArtSci Environments through Eye Candy Disruptor, EcoSensual Synesthesia and Gamification of Risk. Additional thanks to Tentacles Gallery, Bangkok, Thailand. Thanks to Praba Pilar for designing the initial Underwater AR prototype at our Woodstock gridfree residency in preparation for the NO!!!BOT performances at Grace Space in NYC, May 2018. <https://www.prabapilar.com/events/nobotnyc>

TERMS KEY:

- AV = Audio Visual
- AR = Augmented Reality
- HIAR = Hydro Immersive Augmented Reality (HIAR)
- VR = Virtual Reality
- VJ = Video Jockey
- XR = Extended Reality
- ISLIXR = instaSnap Limited Interactivity Extended Reality
- UX = User Experience
- UDX = User Deprogramming Experience
- DCCTG = DinaCon Cone of Tropical Geekdom
- UI = User Interface
- MR = Mixed Reality
- MRMR = Mashup Remix
- Mixed Reality
- DoD CNS = Department of Defense Central Nervous System
- DINAOSPLA = Digital Naturalism Open Source Public Lab Aesthetics
- A/d = art over data ratio



MICROFEEL IN NATURE

Sebastian Seifert

Download his dinacon music here:

<https://www.youtube.com/watch?v=-aGMXZUknvM>



SPANISH

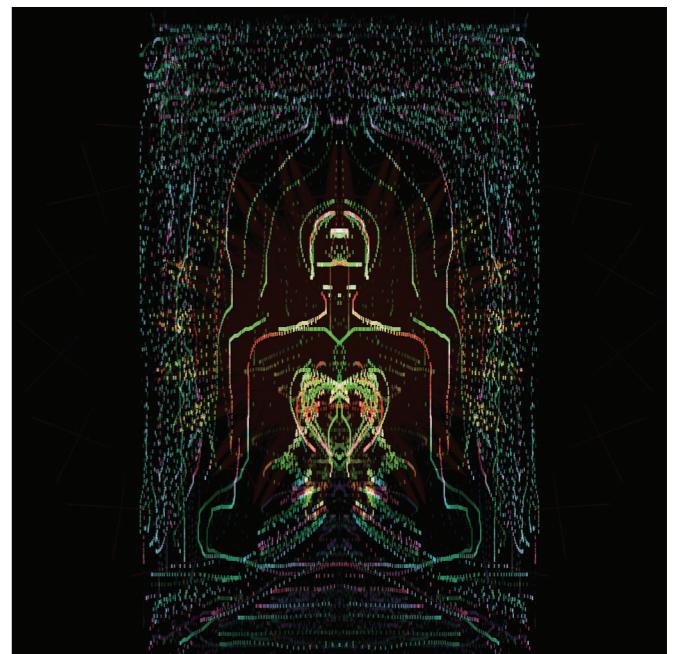
La música para mi es una forma universal de comunicación, un lenguaje de sentimientos que permite llegar al corazón de las personas. De alguna manera, una especie de código universal que tenemos para poder conectarnos.

Mi nombre es Sebastian Seifert soy artista multimedia y productor musical. Mi proyecto de música electrónica se llama Microfeel; y con él en los últimos años he estado tocando en vivo en formato audiovisual. También he grabado en el estudio los álbumes que he realizado, que hasta el día de hoy son 4. La naturaleza siempre ha sido una mis mis fuentes principales de inspiración, es por eso he venido a este entorno virgen a crear nuevos sonidos y nuevas visuales.

ENGLISH

Music for me is a universal form of communication, a language of feelings that reaches the heart of people. In a way, a kind of universal code that we have to be able to connect.

My name is Sebastian Seifert I am a multimedia artist and music producer. My electronic music project is called Microfeel; and with it in recent years I've been playing live in audiovisual





format. I have also recorded in the studio the albums I have made, which to this day are 4. Nature has always been one of my main sources of inspiration, that is why I have come to this wild environment to create new sounds and new visuals.

ABOUT

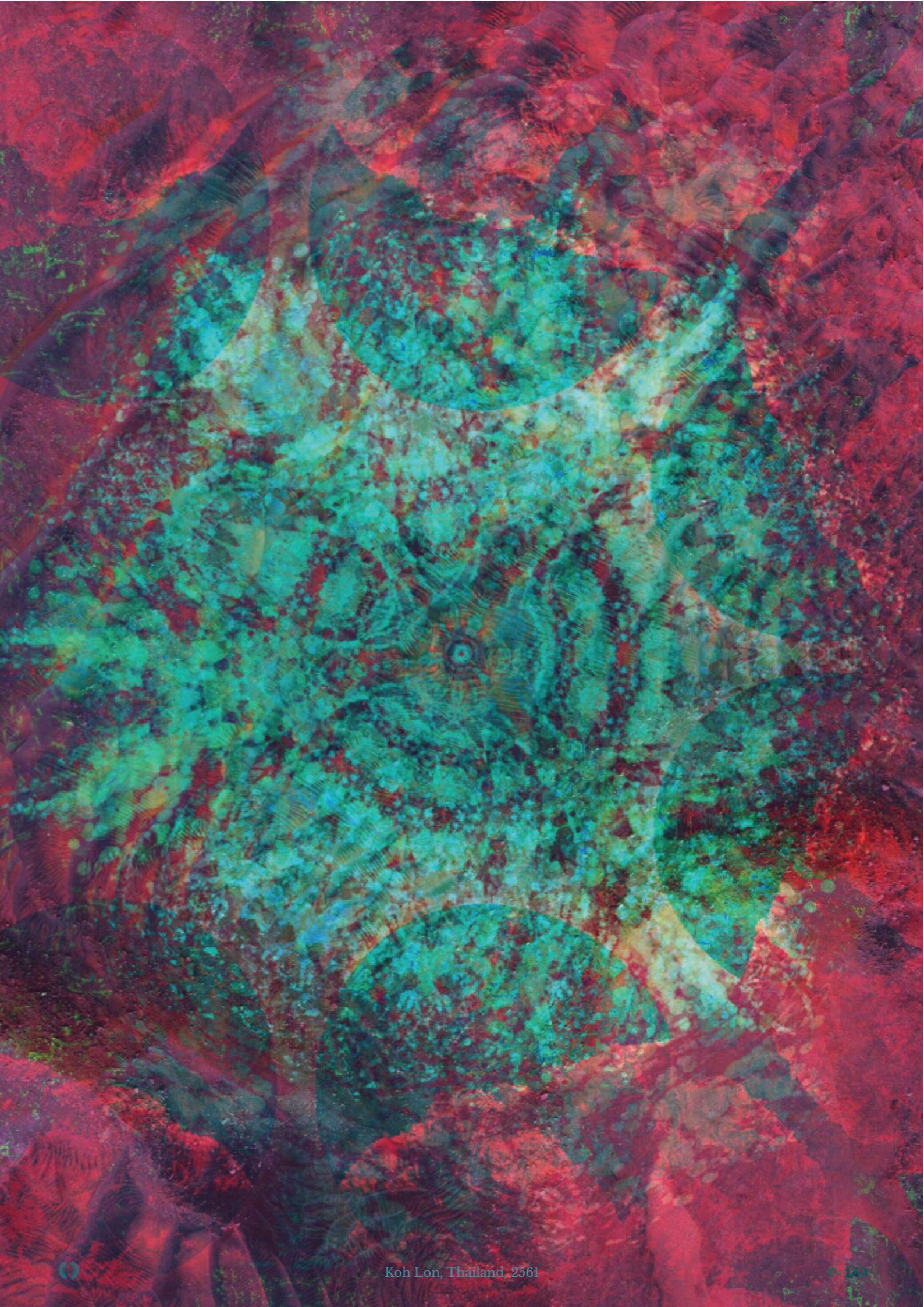
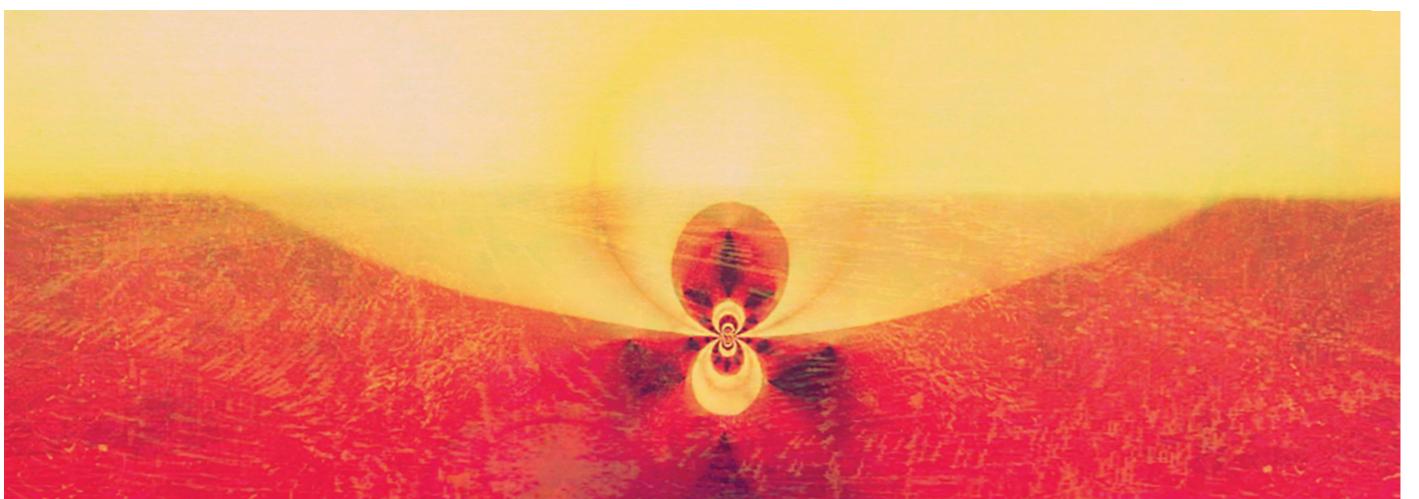
I am a multimedia creator and explorer, a music producer, a media designer and a world traveller. I am from the big city of Buenos Aires, capital of Argentina, where I was born. Actually I live and work in my beloved Barcelona, since 2002. However, I consider myself a citizen of the world, because I am always travelling and living almost like a digital nomad.

I have different jobs because I like to be involved in various field's projects, but most of the time I work at RANDOMIKA, my multimedia consulting company, where I am the founder and project manager.

I am also a full time electronic music producer with my project MICROFEEL, which keeps me travelling and

touring the planet with my audiovisual live-set in festivals like MUTEK, SONAR, SZIGET, and many cultural venues, art galleries, clubs, castles, churches, gardens, abandoned factories and other unusual places. Microfeel works with textures and filtered emotions meshed with different ambients, IDM, experimental sounds, and a language which evokes a grand visual design. Even though electronic music is the base of my work, I have the will to transcend genres and disciplines.

I like to be involved in interesting scoring projects for soundtracks, dance, videogames, and theatre. I also collaborate with Zynthian the open source digital synthesizer as beta tester, featured artist and promoter, an amazing music technology project from Barcelona. You can listen to my music at Soundcloud (yes, you will find me also at Spotify, Apple Music, Google Music, and many others) and browse my Bandcamp to buy it without intermediary and help me keep on working out.
[HTTP://WWW.SEBASTIANSEIFERT.NET](http://WWW.SEBASTIANSEIFERT.NET)



SANDCASTLES BY JOREG

Joreg

Joreg describes these plainly as his “attempts at acquiring a new skill.”

<https://www.youtube.com/watch?v=HlEao2AxUMk>
<https://www.youtube.com/watch?v=GaFRcvvPOJI>

Tool: Shovel bought at local hardware store “super cheap”

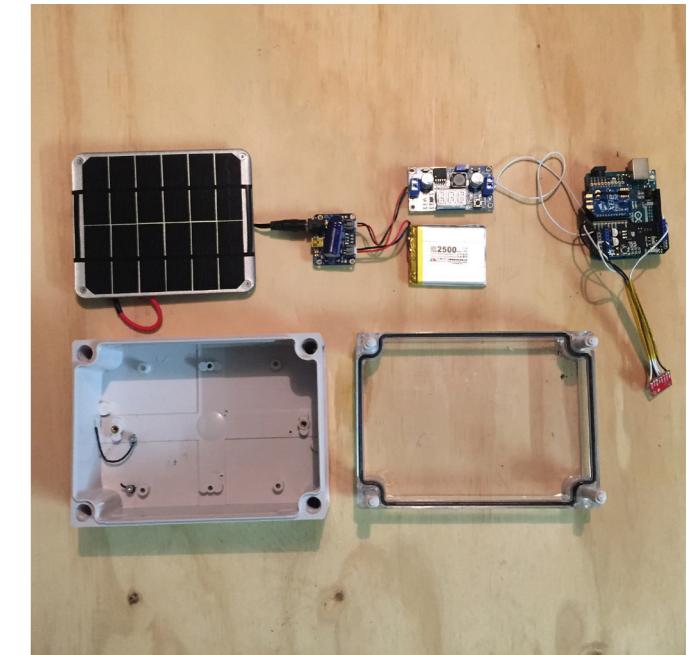
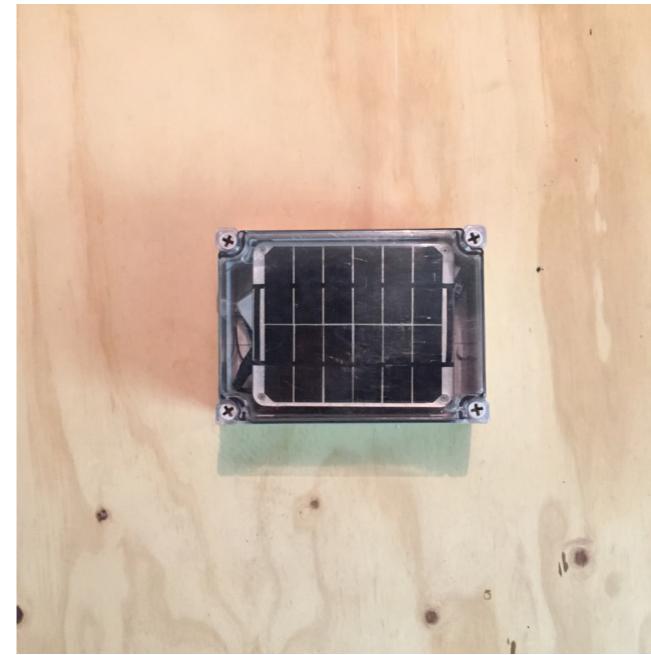
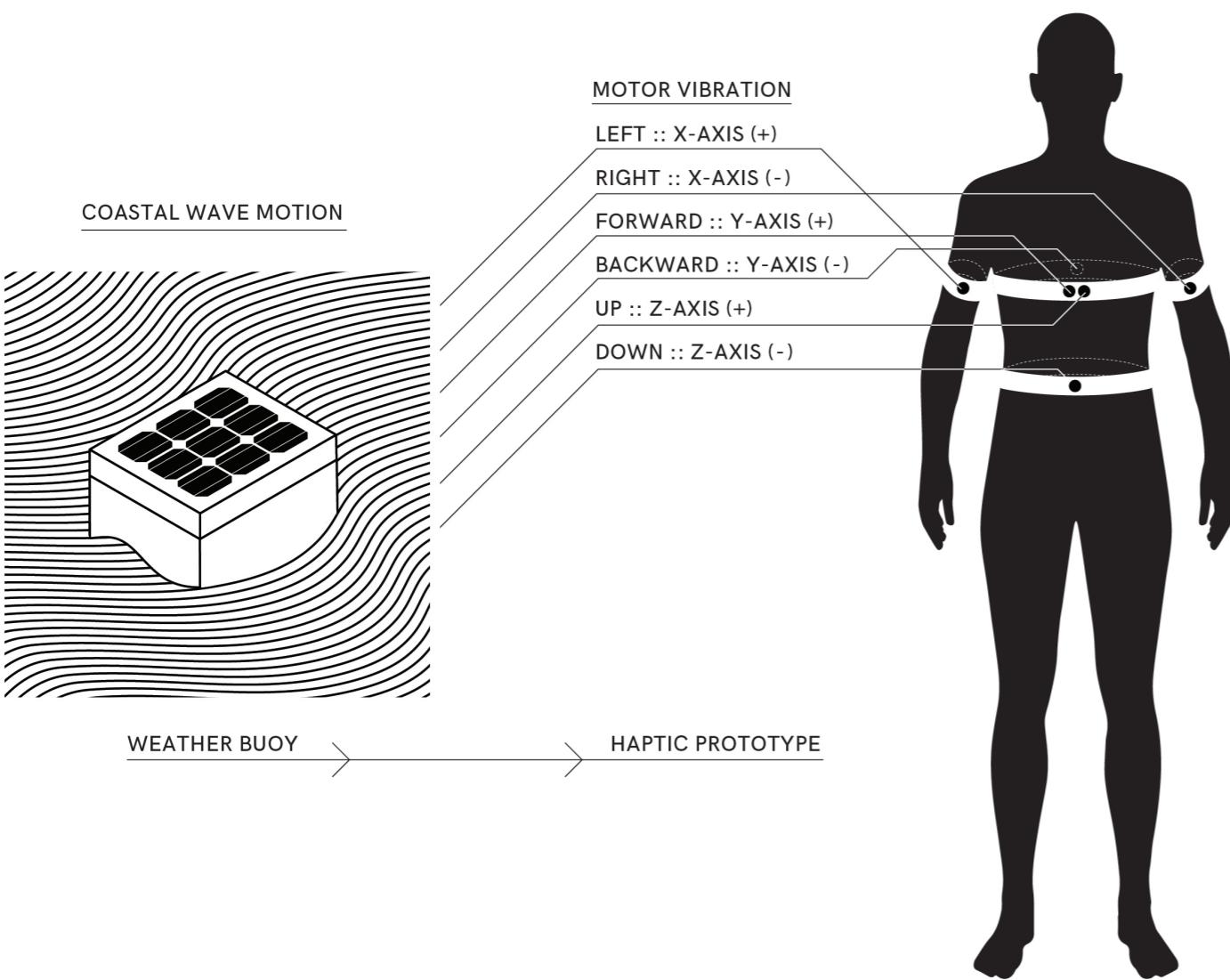
More photos >> <https://www.flickr.com/photos/plusea/sets/72157700729452845/>
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Inspired by the god of sandcastles Calvin Seibert.



WAVE TRANSLATOR

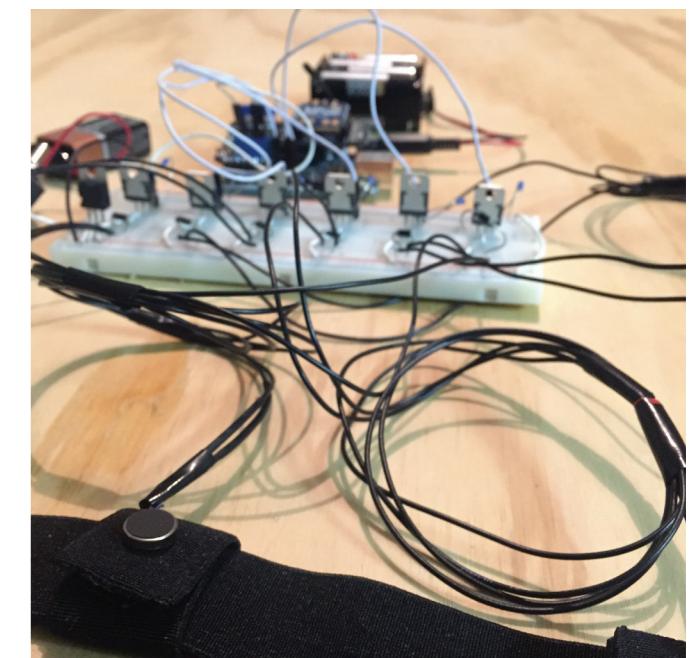
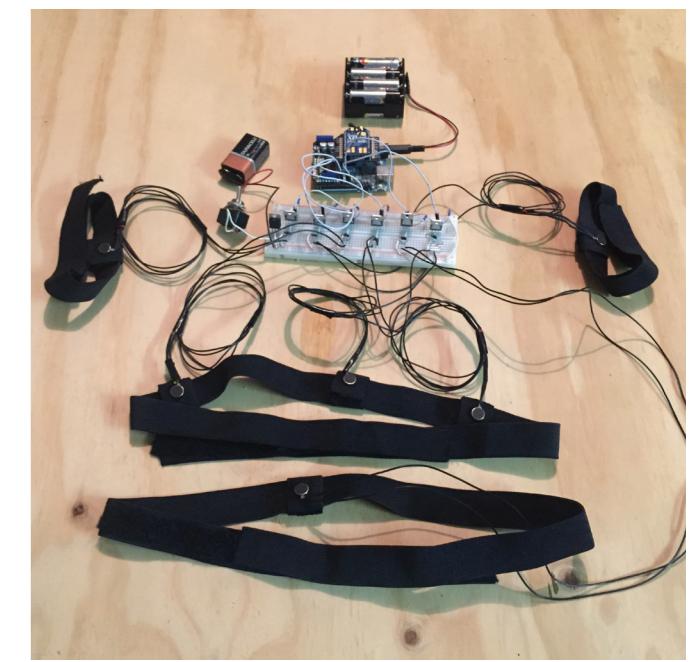
Devon Ward

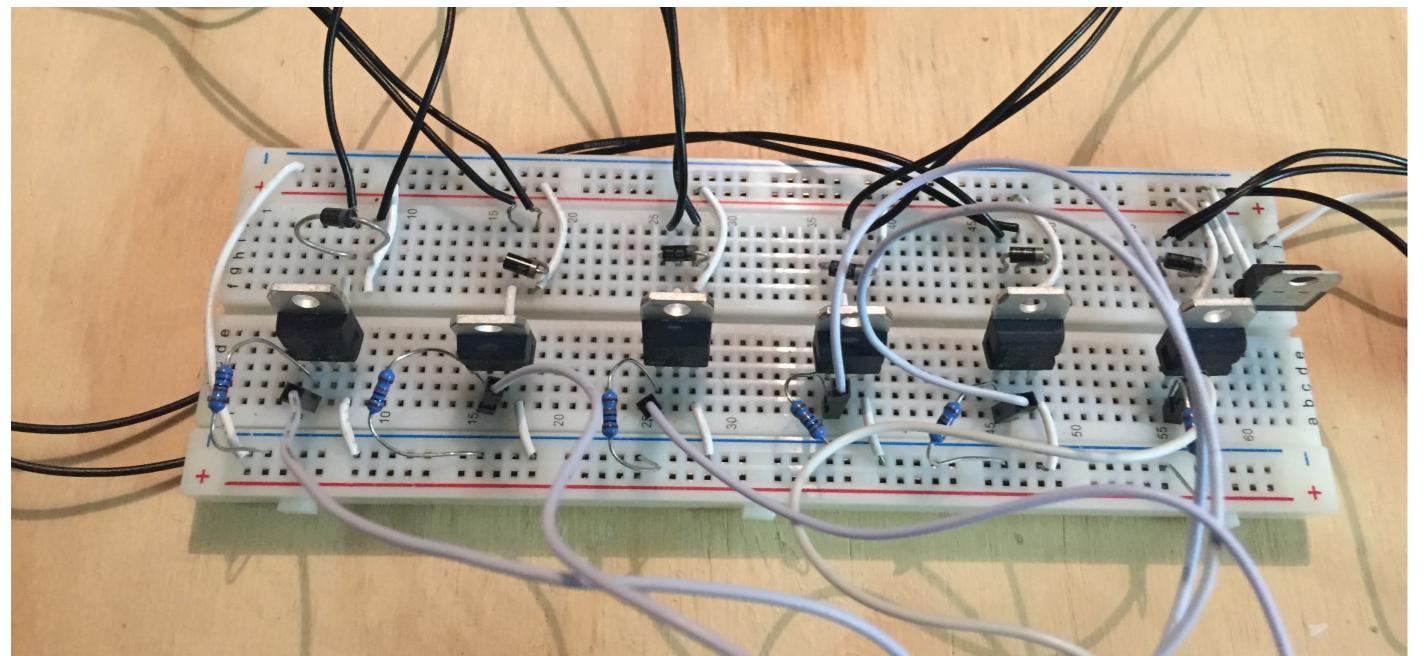


The project started as an exploration into the increasing allure of highly mediated experiences of environmental phenomena. It began by asking: what are the implications of translating the immediate, felt experiences of naturally occurring events—in this case waves crashing on the beach—into highly mediated experiences of data. Would an apparatus that translates wave-motion into datapoints, which drive haptic motors, create a new form of haptic memory that enhanced the experience of a place, or would it act as a hyper-mediated Siren song that distracts and dislocates one from the experience of the real phenomena?

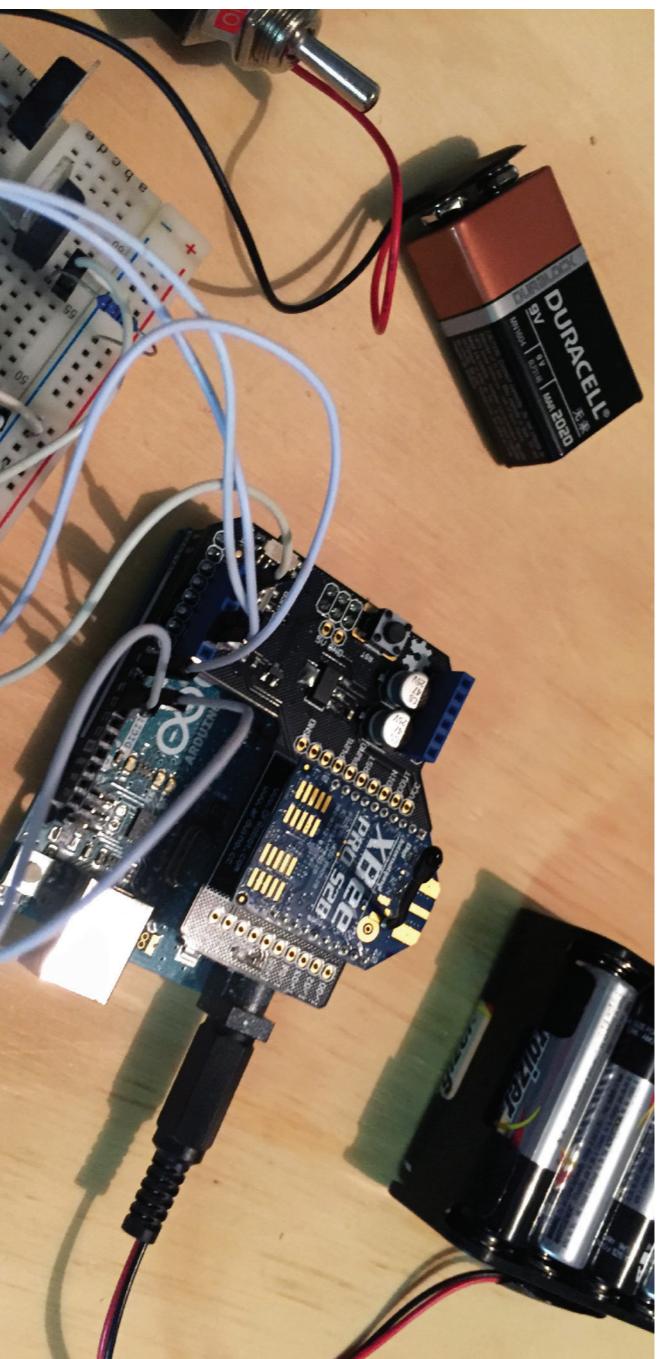
The project consisted of two parts: a homemade buoy and a prototype of a haptic wearable. The buoy consisted of a weather-box, a solar panel, lipo battery, voltage booster, Xbee and an Arduino connected to an accelerometer. The haptic prototype consisted of an Arduino, an Xbee, a 9V battery, six n-channel MOSFETs, a 5V voltage regulator, six vibro-motors, wire, resistors, nylon fabric bands and some Velcro.

The buoy was able to detect the surface motion of the waves on the island's coast and wirelessly broadcast that data to the haptic prototype. The haptic prototype consisted of four





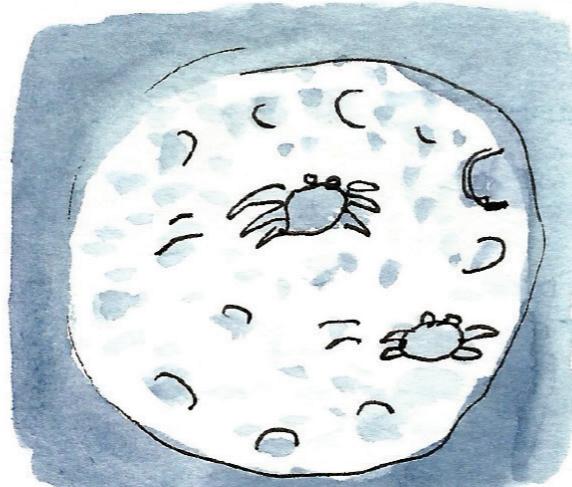
nylon bands with 6 motors: one band for the left arm, one for the right arm, one band for the chest and one for the stomach. The movements of the buoy corresponded to motor vibrations in the haptic prototype. If the buoy accelerated to the left, the wearer would feel a vibration in their left arm. The haptic prototype resulted in a calming experience, a successful result for a week on the island. However, question about the significance and impact of devices such as this remain.



On the walk back to the house we saw:



a big-ass bat



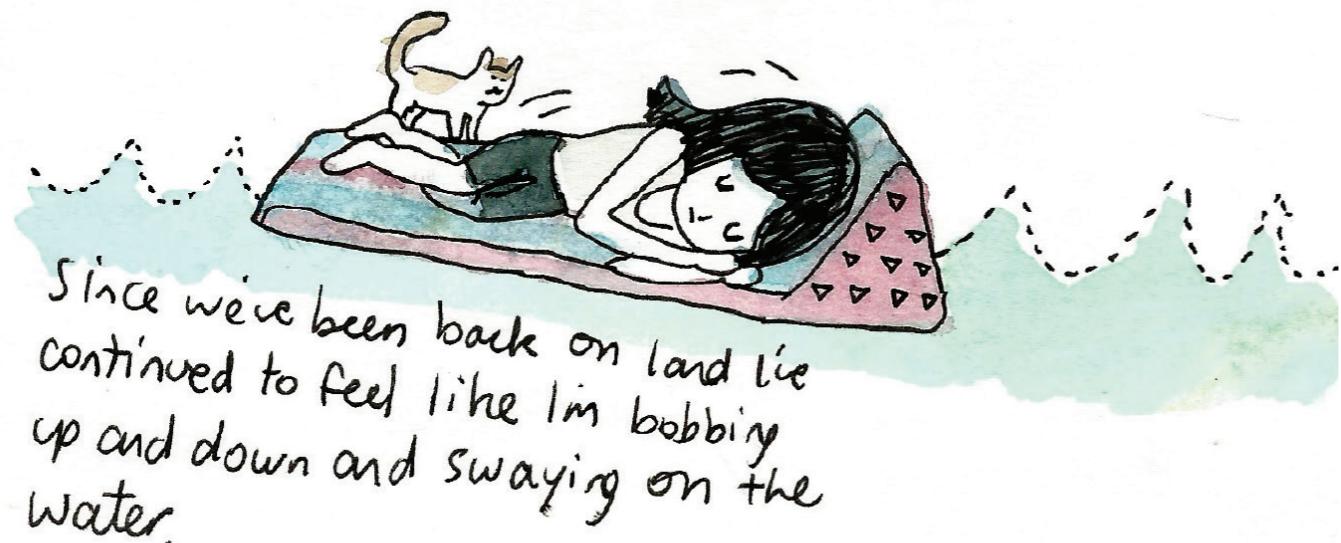
Lots of crabs scuttling by



A snail I narrowly avoided stepping on



phosphorescence

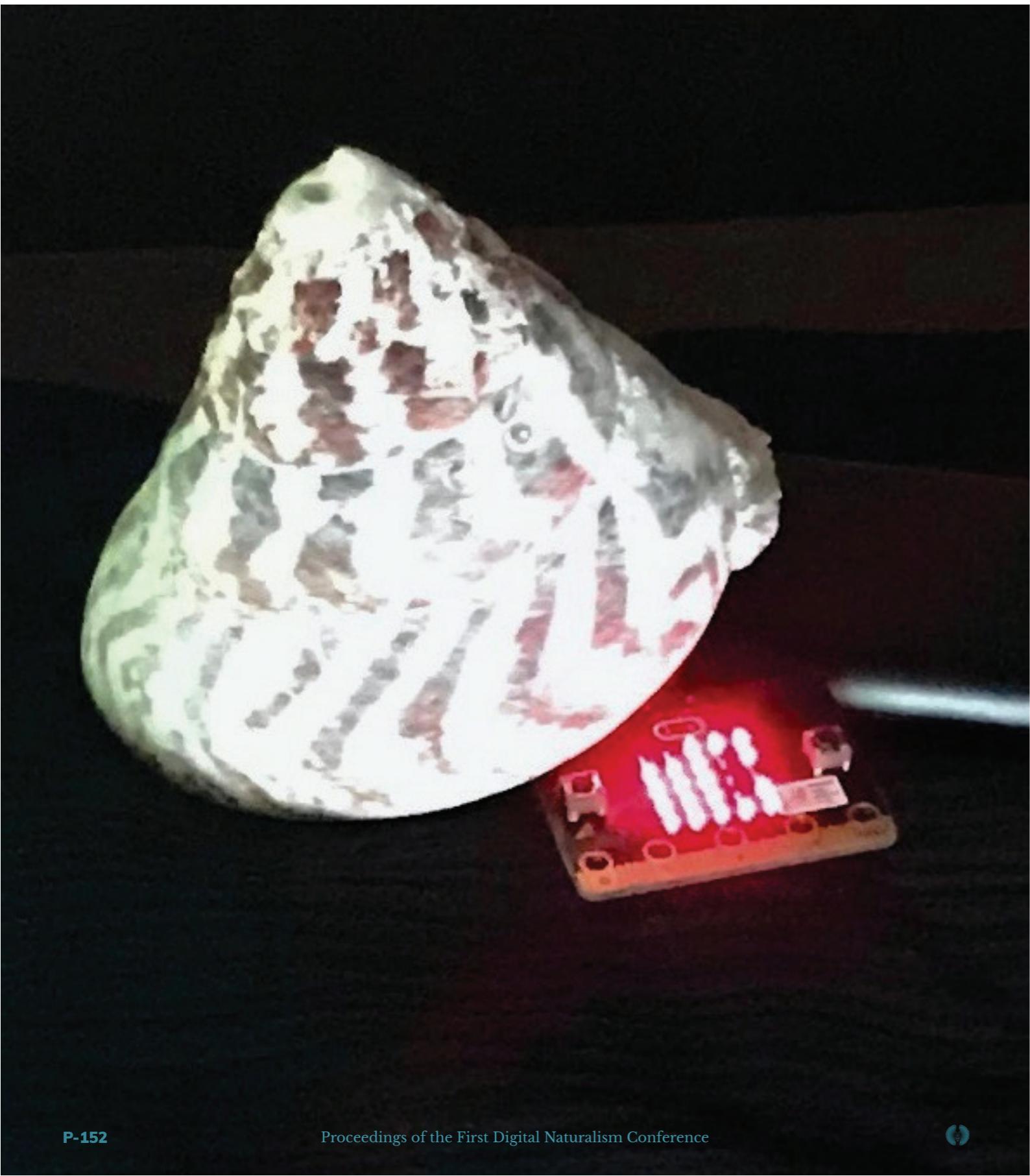


Since we've been back on land I've continued to feel like I'm bobbing up and down and swaying on the water.



DINACRAB: HERMIT BEHAVIOR

Margaret Minsky and Oliver Steele



When humans are near, making noise or stomping on the ground or rippling the intertidal waters, our crab retracts swiftly into its shell and only a little bit of claw can be seen:

When the humans back away, and stay quiet and still, our crab comes out and waves its claws about, testing that it has a peaceful environment again, and then gets on with its business of scrabbling about looking for food or patrolling its space:

Who is our crab?

We have been taken with the hermit crabs of Koh Lon, their big personalities (from an anthropomorphic perspective) and varied looks and behaviours (from an ethological/naturalist perspective). Throughout their lives they move to ever larger colorful shells, from compact round snail houses to pointy or gracefully ovoid ones. They come out to the beach in diverse-looking groups because of their differences in size, shell type, and claw colors. If you get close, they snap into their shells, a little patience and distance and they are eager to get on with their business while we are watching.

Another crab, the fiddler crab, was one of the first dramatic animals we met. On our first evening we walked on a huge intertidal expanse exposed by a full moon tide, and the bright orange of swarms of fiddler crabs were dramatic. But as soon as one gets close, one's footfalls, water disturbances, or shadows alert the fiddler crabs who all pop into their holes in the coral or sand. As they disappear one sees their bright orange claws, and then nothing. Only quite a bit of distance or perfect stillness from the humans gives them a



Blocks {} JavaScript

```
when on radio received receivedNumber signal
  set lastSignalStrength to signal
  if ishuman then
    call function updateProximity
    if ishuman then
      call function humanCondition
    else if isNear then
      show leds
    else
      show image [hermit1 v] at [0,0]
      change hermitcounter by 1
      if hermitcounter > 3 then
        set hermitcounter to 0
  end
end

on start
  set isNear to false
  set nearThreshold to -70
  set farThreshold to 0 - 70 + 3 * 4
  set farThresholdDelay to 500
  radio set group to 1
  radio set transmit power to 3
  set ishuman to 0
  set hermit1 to [create big image]
```

safe time to come back out.

We simplified my (Margaret's) original wearables Dinacon project concept to collaborate on creating "humans" and "crabs" animated on Microbit boards, which felicitously have cute orange-red displays on board suitable for crab claws! We installed one of our crabs in a mighty shell, and let Dinosaurs carry human boards and other crab boards around with them. Using the Microbit's packet radio capability as a quick, though not very accurate or precise, ranging technology, crabs can tell whether there is any human nearby. As soon as any human gets in range, it snaps into its shell, leaving just a claw visible (like a hermit crab's visible armored claw blocking its shell opening). As soon as all humans are far enough away, the shy crab comes back out waving its claws about.

Using the packet ranging for interactivity between creatures was inspired by a lovely and extensive dance performance interaction project by Emily Daub, her student capstone project at the ATLAS Center at CU-Boulder. We are grateful for her inspiration, and for help from Emily and her student colleague Annie Kelly.

Creating the animation of the crab claws, in my happy place near the sewing/textile/yarn corner. Microbit universe in an egg crate.

Oliver and I collaborated on programming for the crab/human existence and interactions. We used the microbit/microsoft blocks-language interface to its Typescript language (Javascript). Oliver built up a test suite for packet radio ranging in textual Typescript as well. I built several wearable versions of the boards using various batteries and sewn wearable holders, then ended up simplifying to hand-carrying the light-weight boards with simple enclosed

battery pak. I also decided on an indoor installation space for our largest crab. For the humans, it feels like walking on the beach while carrying a rock or shell one might have picked up. For the crabs, is that like carrying a shell? No idea...

Here's video of DinaCrab: Dinacrab with human 23 sec and Dinacrab in-progress 2 mins

This is most of the blocks code for the main interactivity. It supports as many "crab" and "human" boards as you want, we had four at Dinacon. Usually configured as one crab, three humans, sometimes two crabs two humans.

Any questions contact us!

You can find the micro:bit code to make your own humans and crabs at: <https://github.com/margmarg/Dinacrab>

You can also find Oliver's micro:bit RSS metering code here: <https://github.com/osteele/microbit-signal-meter>

by Margaret Minsky and Oliver Steele
Koh Lon, June 27 – July 7



ISLAND CATERPILLAR

Hannah Wolfe



Hannah Wolfe's goal was to explore caterpillar movement while on the island. She looked at different materials to make the caterpillar with and different movement techniques. She tested using a motor to spool fishing wire and a linear actuator driven spiral. The final design used a 12 volt motor to power a spiraled linear actuator. While the initial design was 3d printed, the final construction was made out of bamboo, linked together with an elastic band. Feet were added to stabilize the caterpillar.



DINASOUND PODCAST

Pearl Ryder

Pearl Ryder is a cell biologist who came to DinaCon with the goal to explore the natural world to revitalize her life as a biologist and to learn more about creating audio stories. She has created DinaSound to collect her stories and sounds of the jungle. So far you can listen to an audio diary and a fun conversation about weaver ants. Stay tuned for interviews with participants and lots of “stumbled upon” conversations at DinaCon!

Podcast here: <https://dinasound.wordpress.com/>

Follow Pearl on Twitter @pearl_ryder for more stories from DinaCon and glimpses into the life of a scientist in training.

pearl_ryder



pearl_ryder
Cicadas at the Banana Plants

Science
0:22



pearl_ryder
Craig and I talk tetanus and vaccines

3 months
Science
27:03



pearl_ryder
DinaCon: End of Week One Update

3 months
Science
8:07

BIOBANG! PODCAST

Andrew Quitmeyer, Tasneem Khan

Featuring many real, imaginary, and musical guests

Biobang! is the Digital Naturalism Conference's Podcast. Having a unique 8 week conference allows us to do long-form art and documentation such as having our own weekly podcast documenting the work and imaginations of our guest visitors.

Available here: <https://www.dinacon.org/category/podcast/>

Following the basic format of the entertainment podcast, “Comedy Bang Bang,” Biobang is a series of casual interview with the hackers, scientists, and artists around. It’s generally half real interviews and half fictional characters and the lines of reality blur often. Every week we broadcast from a new fictionalized facility at dinacon and grow the conversation around local happenings and creatures. Each episode also features a “Poke it” segment where you can learn what should and shouldn’t be poked!



Photo by Umeed Mistry

DIY SCIENCE PODCAST

Lucy Patterson

Lucy reports back from her trip earlier this year to Dinacon – the international “digital naturalism conference”, bringing together jungle, beach, ocean, microprocessors, new media art, DIY science, food-phreaking, crafting, coconuts, robots, crystals, drones, crabs, cats, disturbing intertidal invertebrates and a great many interdisciplinary humans for 6 weeks on a small island in Thailand.

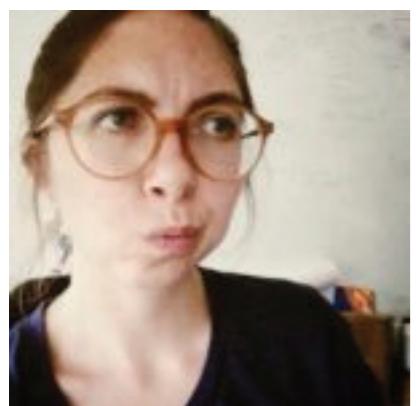
The podcast is an interview with conference organisers Tasneem Kahn and Andy Quitmeyer. We talk about why and how they put Dinacon together, the experiences that lead them there, and the futures they want to build. Both are interested in creating ways to expand beyond the usual boundaries of academic research by creating field stations and experiences that support deep immersion into local context and facilitate radical exchange of perspectives and disciplines. Hacking the wild and hacking academia at the same time. <https://diysciencepodcast.org/>



Home Episodes Impressum & Datenschutz Technical details

EPISODES

DSP005 - Hacking the wild: Tasneem Kahn & Andy Quitmeyer putting science in local context



The DIY Science Podcast
DSP005 - Hacking the wild: Tasnee

Lucy reports back from her trip to Dinacon – the “digital naturalism conference” – where she spoke to

1:01:17

INFO CHAPTERS SHARE DOWNLOAD AUDIO

MP3 Audio [52 MB] Download Show URL



MAKERY ARTICLE

The Thai Island and the Biopirates

Cherise Fong

(excerpted from a story originally published on Makery)

“Phuket (Thailand), special report

Inspired by the Slovenian PIF Camp, the first Digital Naturalism Conference hosted more than 80 scientists, artists, hackers and makers on an island in the south of Thailand from May 26 to July 8.

Walking among hermit crabs at low tide. Making microbial batteries on the beach. Flight testing a drone piloted by a plant. Stepping through sea urchins to escape from the island. Recording a podcast within the submerged “bathosphere” of a pirate ship. Examining saliva crystals under the microscope. Knitting stuffed animals from plastic yarn. Silhouetting yoga against the setting sun. Welcome to the Digital Naturalism Conference, a.k.a. Dinacon.”

Full Article Here: <http://www.makery.info/en/2018/07/17/lile-thai-et-les-bio-pirates/>

HUFFPOST ARTICLE

Welcome to Inventors' Camp

Tristan Copely-Smith

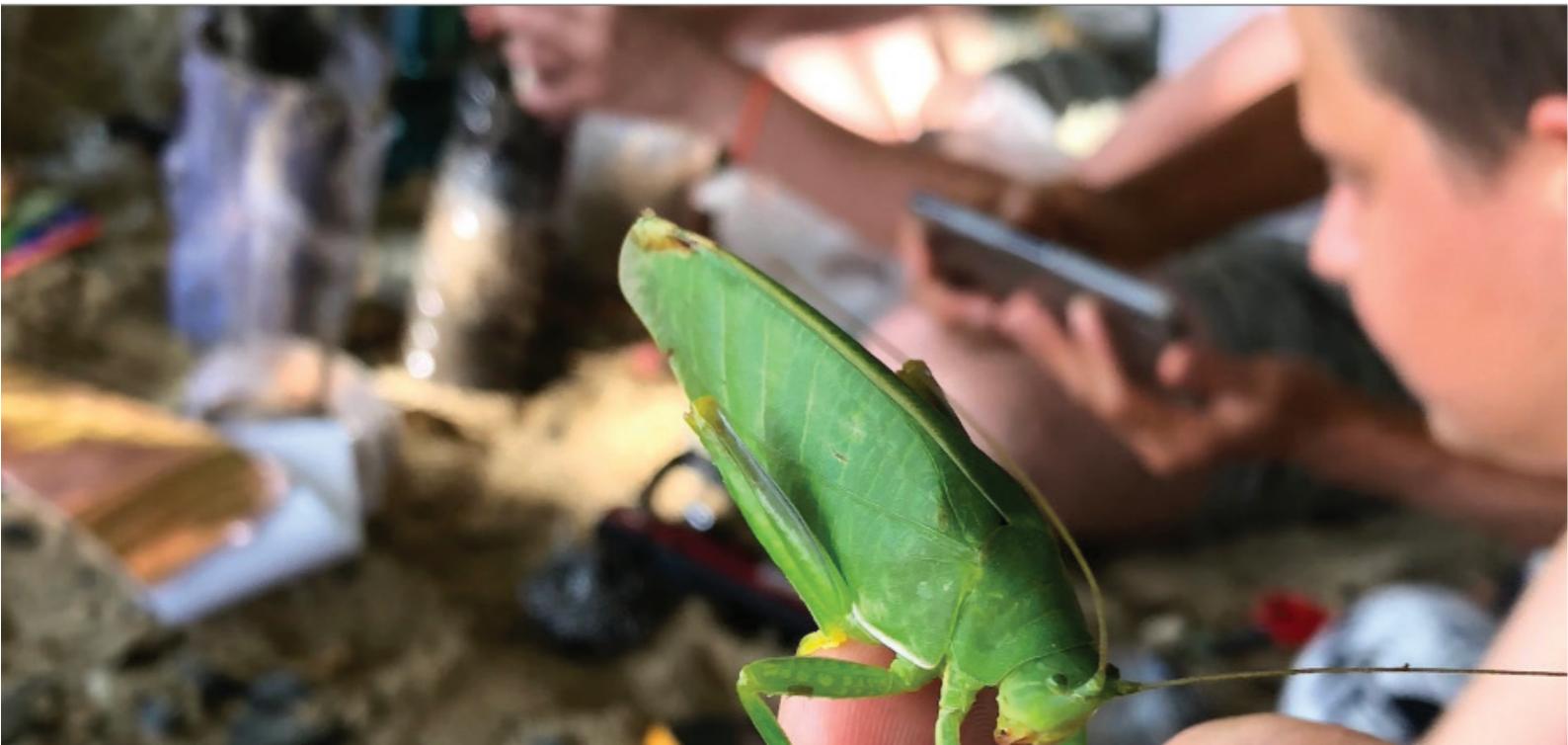
(excerpted from a story originally published on HuffPost)

“Inspired by Von Frisch, Quitmeyer teamed up with biologist Tasneem Khan to organize a six-week inventors camp on Koh

Lon, a large, mostly empty, rainforest-covered island off the coast of Phuket in Thailand. Artists, scientists and technologists were invited to propose any kind of experimentation involving the local natural environment, the only requirement being that they documented their experiment and shared the tools and results online for others to see and recreate.”

The gathering, which ran from May to July, was an eccentric mix of creativity and investigation, with the resulting inventions at once ingenious, beautiful and extremely weird. Michael Candy, an Australian roboticist artist, built a tree-climbing robot from a wire brush, a repurposed drone propeller and various 3D printed parts. The robot was able to quietly scale the island’s 70-foot palm trees without disturbing animals above the difficult-to-reach canopy, feeding back live video using an onboard camera..

Full Article Here: https://www.huffingtonpost.com/entry/inventors-camp-science-experimentation-wild_us_5b979d64e4b-0162f4730c952





FOOD



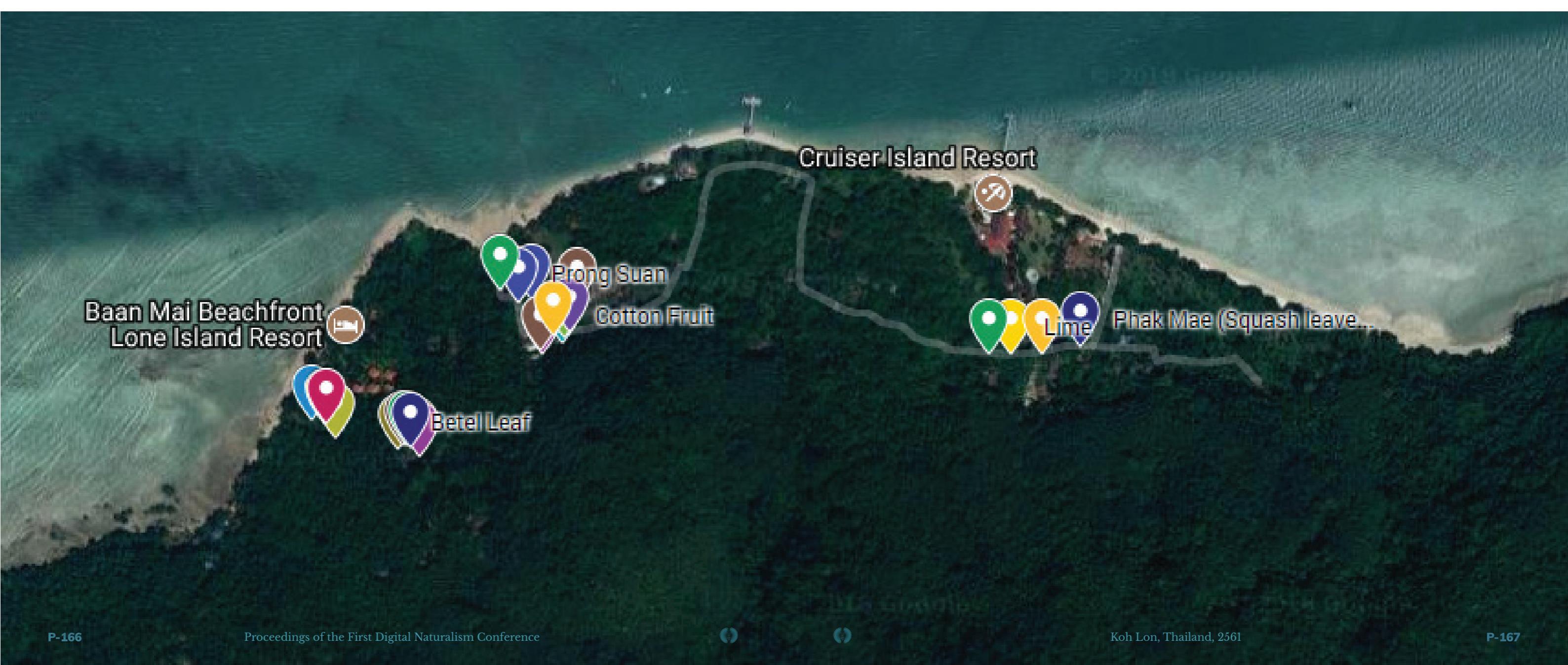
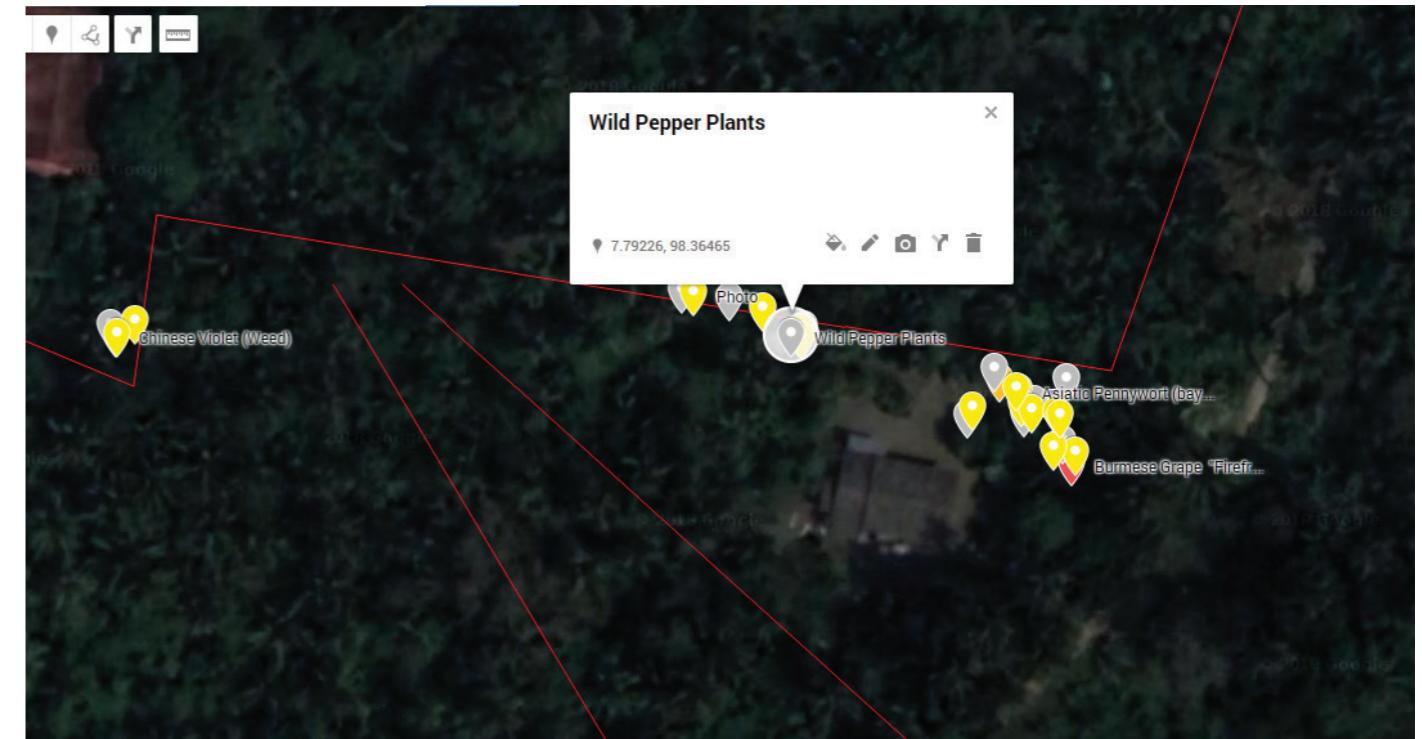
FORAGING MAP

Craig Durkin and Contributors

Craig Durkin is a guy who likes foraging! He helped found concrete-jungle.org in Atlanta to help locals make use of the free food growing all around them. He brought this foraging magic to dinacon! Going on foraging trips with our local expert, Pom, he began a collaborative map to chart all the delicious things growing all around us!

He was in the first week of dinacon and his and Pom's early work making use of these local, wild delights echoed throughout dinacon!

The working map is available at:
<https://tinyurl.com/dinaforage>



Dinacon @ Ko Lon

294 views

All changes saved in Drive

Add layer Share Preview

Koh Lon Foods

Koh Lon Food (Inc. Outside Baan ...)

Styled by name

Photo (24)

Chinese Violet (Weed) (2)

Cottonfruit (2)

Purslane (2)

Sandpaper Tree (Bay Khooy) (2)

Ant lions (1)

Asiatic Pennywort (bay bua ... (1)

Beach Morning Glory (1)

Burmese Grape "Firefruit" (m... (1)

Burmese Grape "Firefruit" (... (1)

Cemetery (1)

Chiku (1)

Citronella (1)

Cotton (1)

Cotton fruit (1)

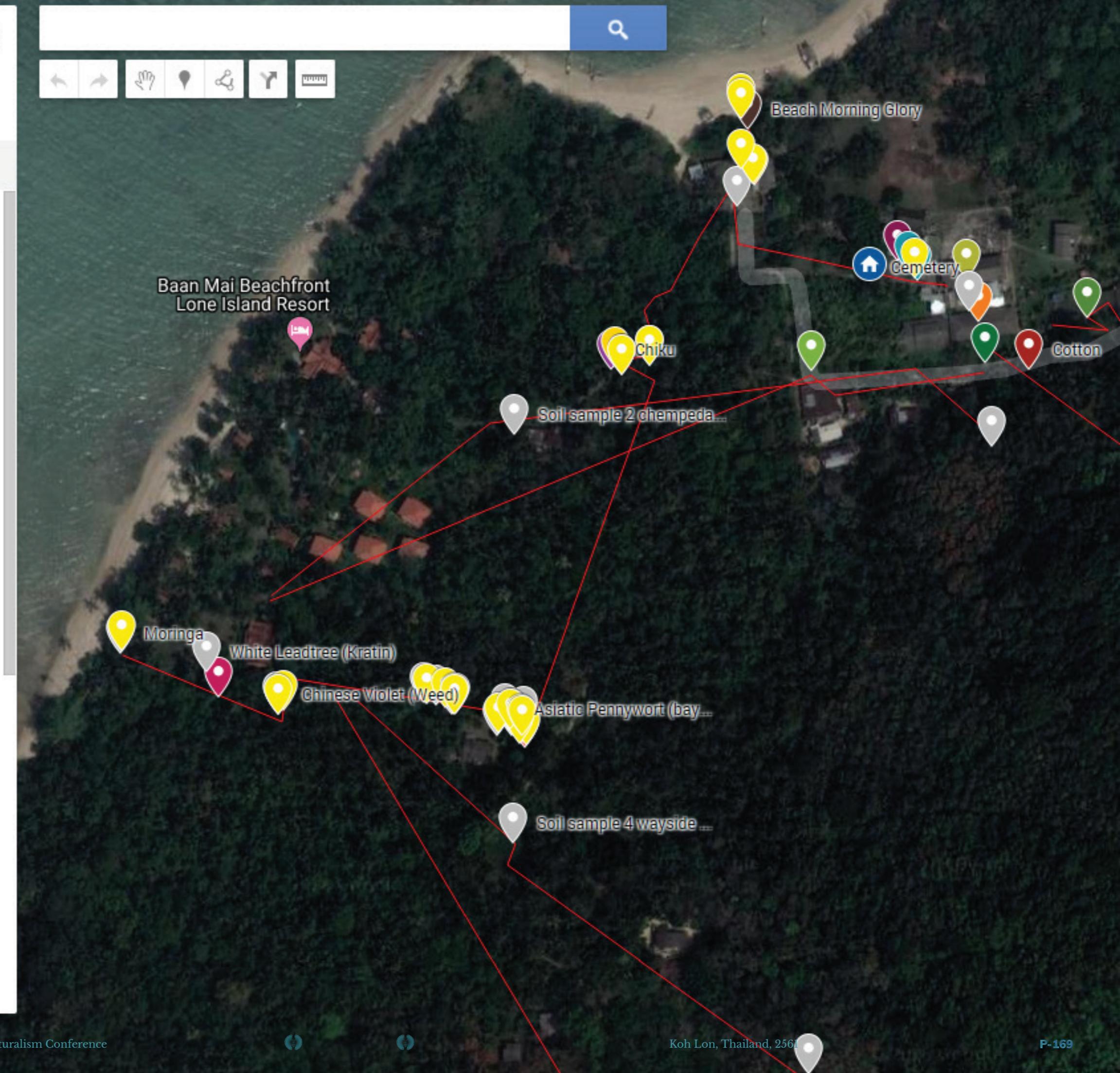
Curry Plants (1)

Custard Apple (1)

Date palm (1)

Fame Flower (1)

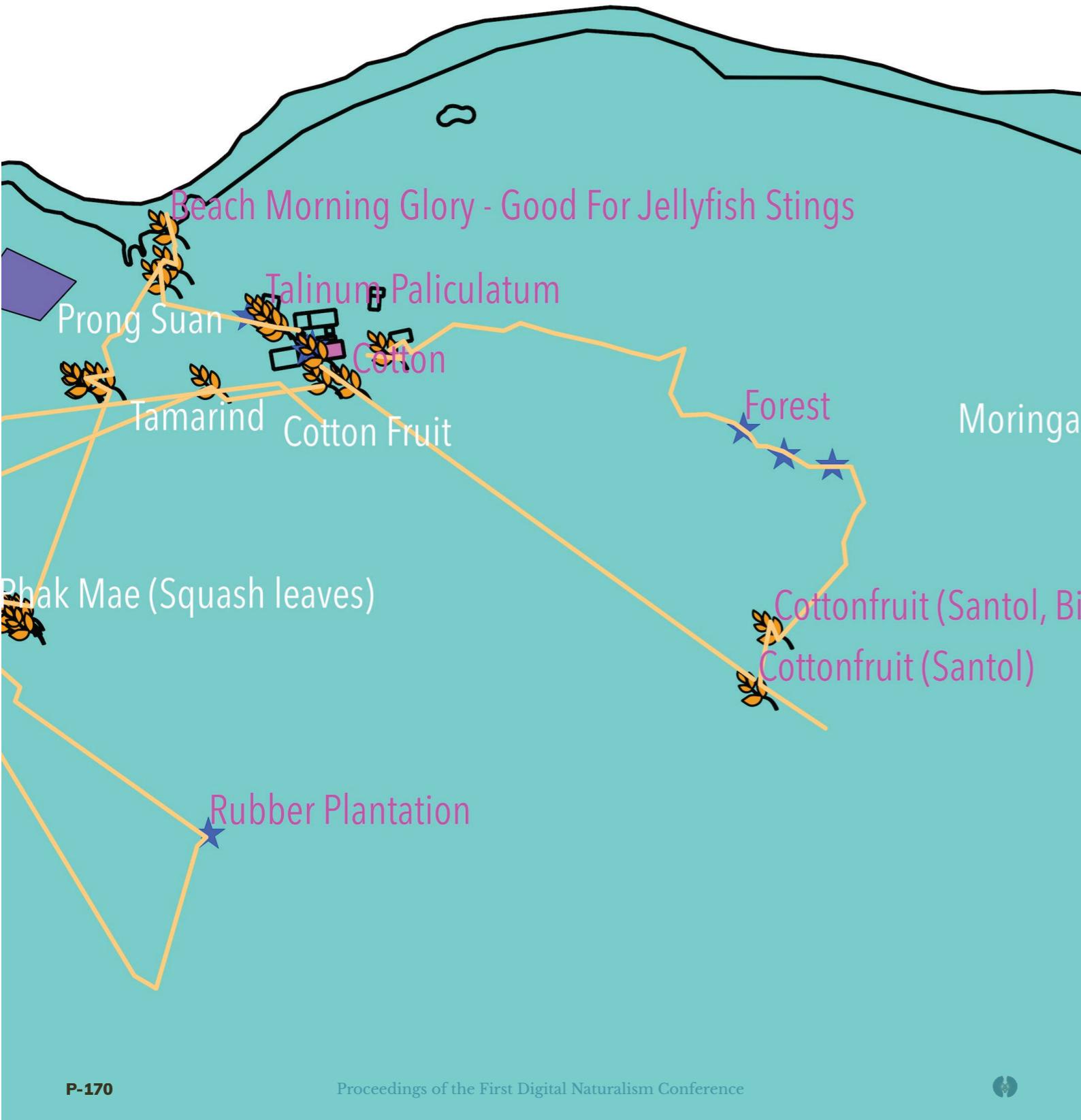
Guava (1)



PLANT SCATTER

Huiying Ng (based on maps by Craig Durkin)

Plants to look out for - An aid to the foraging guide



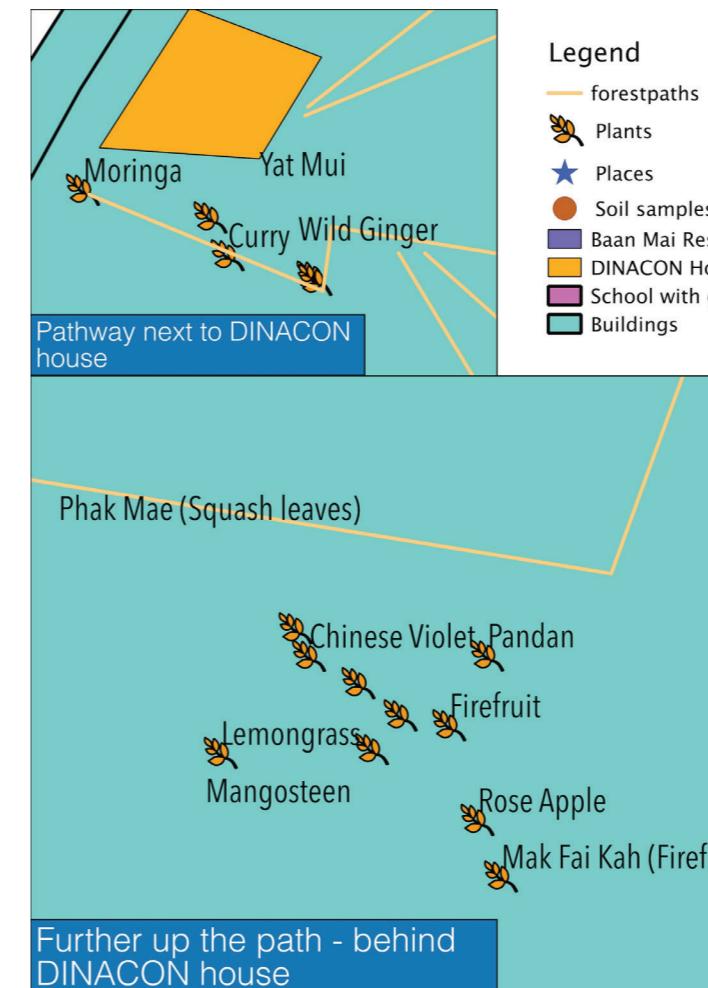
Some old/fossilised DINAsaurs are compiling a cookbook! Not just any cookbook; one with a guide to forageable ingredients and how they scatter over space.

Why visualise plant scatter? Maybe because plant proximities intrigue us, or we're seeking insect friends in nice ecological habitats, or a specific murky mud-water mix for a salty nightcap. Working through plants to find these other things has a zoom-out effect: seeing individuals in interconnected spaces.

But isn't it also amazing how rife with life small patches are? And how much more we can learn to see?

More scatter(d) musings coming up. For now, we also consider:

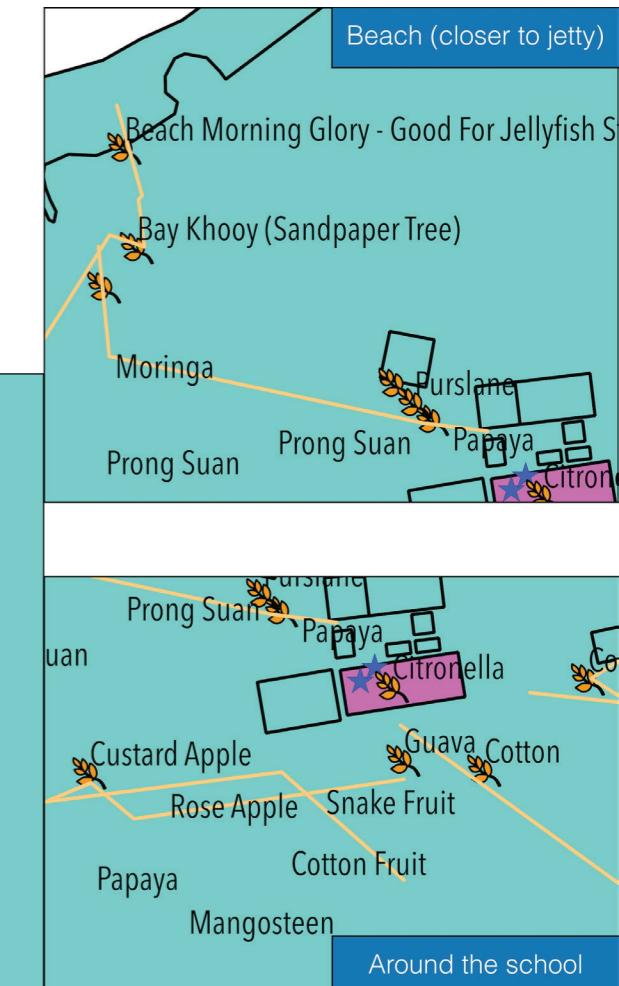
use and property relations: who "owns" the plants? How can we use them knowing that others in the forest also use



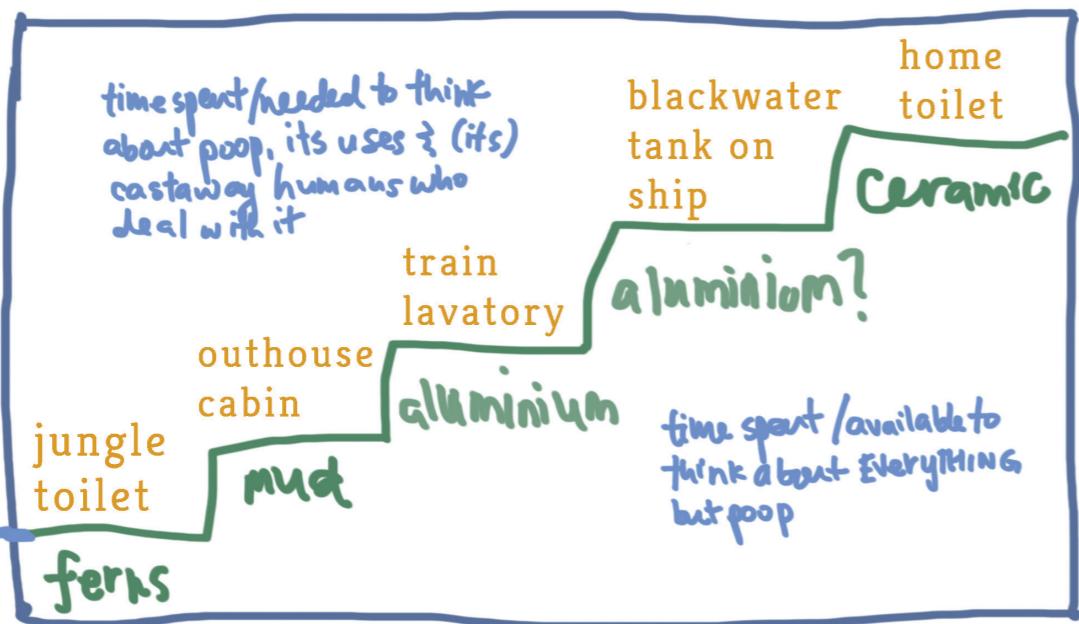
them? How do we create objects or extension tools to sense what stuff belongs to others? Fun maps aside, a map is great to plot out things in space, but use relations shift constantly. Sometimes the best maps are still in our heads!

If maps are still a good viral way to spread ecological awe, what other functions could we place on the map? Categories of usability? Animal habitats? Shades of green? Land elevation?

I am interested in how we image and imagine continuities of space, as an abstracted aspect of life. Life is spatial in so many ways we intuitively get. So messing around with space/sight means messing around with ourselves! Here are resources and ideas I'm/we're continuing to work on with others, and resources you are free to build on and share-alike:
Soil tests: soon!



amount
of planning
+ design
needed



storage tank on a ship, the lavatories of a train, or the wondrous open toilets of the jungles and woods. Strangely, even as we've drawn toilets closer into the intimate proximities of our lives, they've grown the opposite way, becoming more alien to most of us. Specialisation has created black boxes of muck. We're useless to actually live on the planet now without the technical knowhow of a small group of people who can't possibly get around all that much, to be captains of a system in a way that fits the needs of every member in it.

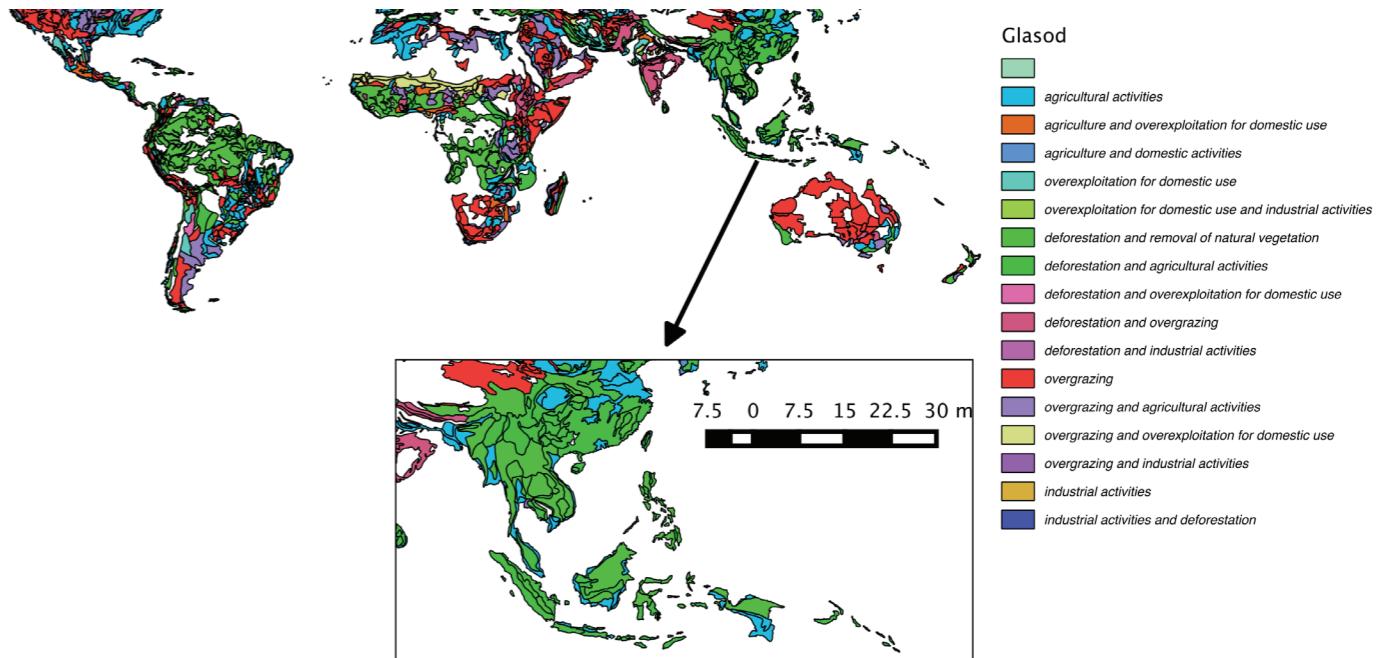
So much for connection. Connection and poop really don't seem to fit. But if DINACON is a connected, bustling, lively island conference/house of ideas in the making and people meeting, it's also about all the residual stuff that sticks, settles, and holds on – more

stubborn than barnacles. A system's input and a system's output are pretty different, but a DINACON that accepts a new wave of people, as a seasoned group leaves its shore, becomes an earthly being rotating through space-time with a gravitational field of its own. What goes in and what comes out all stay in orbit, whether consciously choosing to or not. So then: how many times in two months does DINACON complete an orbit? And perhaps: how many times in two months do other bodies complete orbits around DINACON?

Connectivity is so central and so deadly: buzzing circuits that fail; electric wires buzzing overhead after a rainstorm; buzzing human conversational germs and bees that unwittingly bump into their deaths on weaver ant nests, chasing the shine of a torch. Life is hooked to signs of prom-

yannick

after we added chilis to
the surface protectant for
the ship, we
solved the barnacle
problem—only 10% of the
previous year's barnacles!



ise: we're led by our noses and senses whether we like it or not, know it or not. Most times connections maintain a system, or fall away. Sometimes it leads to new, viable connections: new (medicinal) drug routes, civic partnerships, interdisciplinary breakthroughs and collective-but-autonomous epiphanies. So it wouldn't be strange that social connection, ecological and synthetic-biological connections pushed together become a florid display and a poopy display altogether.

I've been obsessed with soil for the past half a year. Everything for me is a sign to something else about soil; soil might be my orbiting body – as it well should! Water covers about two-thirds of the earth's surface, and after subtracting all the bits of land inhospitable to agriculture (too hot or too cold), only about 3% of the earth is covered in agricultural soil. We like to think of it sitting quietly in plots of land, causing landslides in poor nations or being carted to rich nations, when soil is really a single body of continuous work that stretches between all our minute, not-as-separate-as-we'd-like worlds.

Map layout: Huiying Ng
All sorts of signs interest me. So wading through connections for me was once a little like scaling treacherous cliffs or navigating mangrove swamps: how to

decide which footholds to lean on, and which I'd lose my footing on? It's an interesting question to pose in unstructured environments like DINACON. But a more interesting question would be how these open connections can stay open, as things to care for rather than domesticate: something to play on and around, prodding and pushing and bumping and nudging. A better question might be: how shall we read connections best, so they can each be nurtured in the time and space they need?

Things I referred to:

Plant impedance – Cybres Impedance Spectroscope with Stig

Bees on a weaver ant nest – with Magdalena's torch

The Windup Girl – <http://oceanofpdf.com/pdf-epub-the-windup-girl-download/>

Orbiting celestial bodies, moons and tides – charades with Tasneem, Rob and Andy

The blackwater tank problem – The Diva Andaman and some funky physics

Plant map – extended. Raw data files available here: https://drive.google.com/open?id=1_Xf0hGIV4H-FB2xjwxeSSRyS-inv5I-DZ

DIGITAL GASTRONOMY

Amit Zoran and Ayelet Optional Sella



Digital Gastronomy focuses on the integration of digital fabrication technologies into the kitchen so that they can influence our dining and cooking experiences. At the center of this vision is the creation of a new design space that encompass all aspects of gastronomy — visualizing the way we can manipulate food digitally.

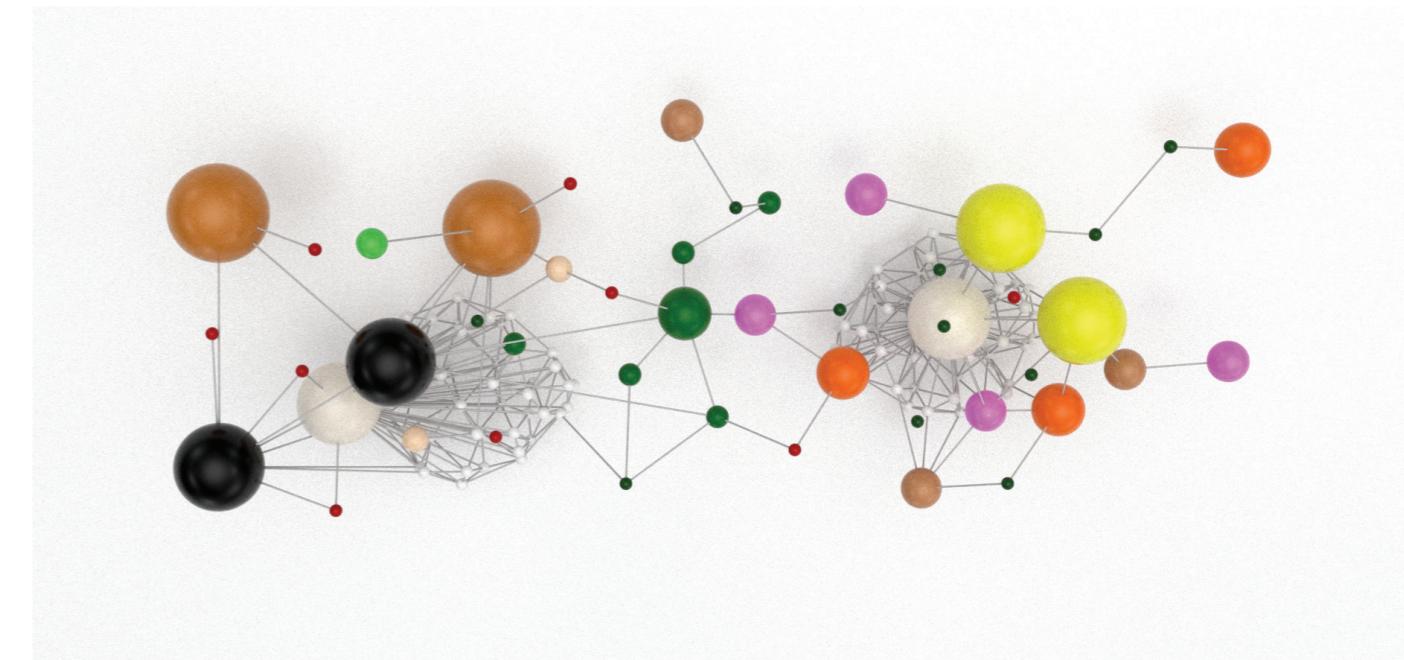
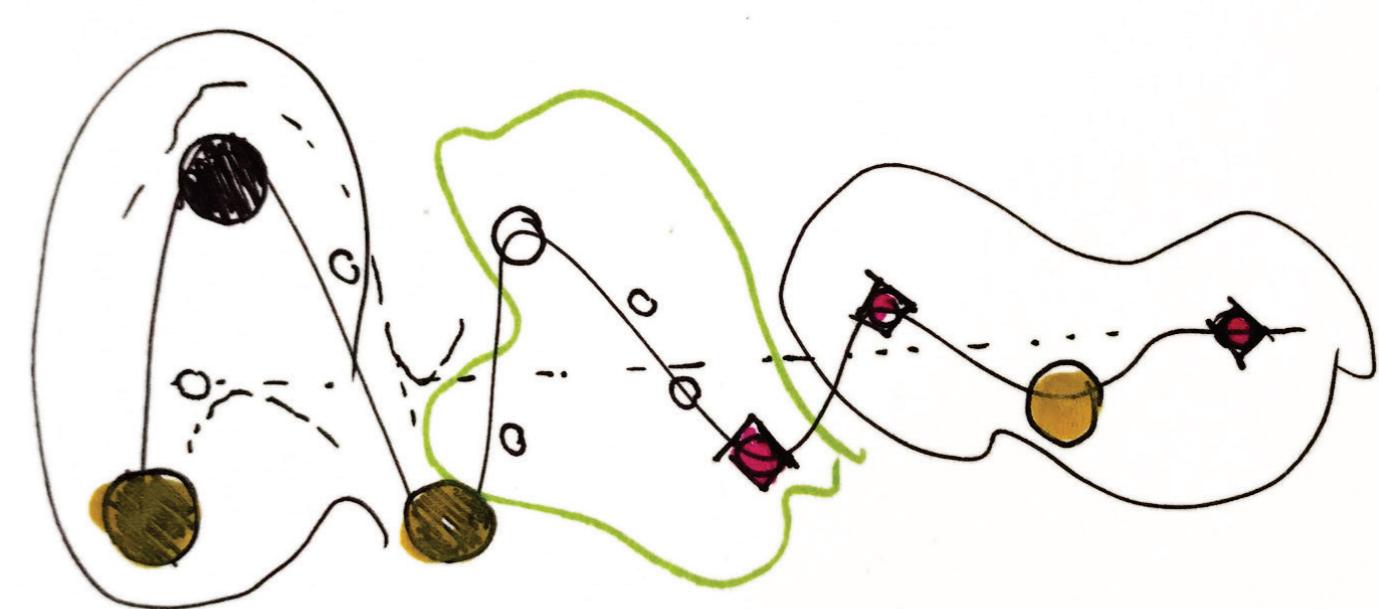
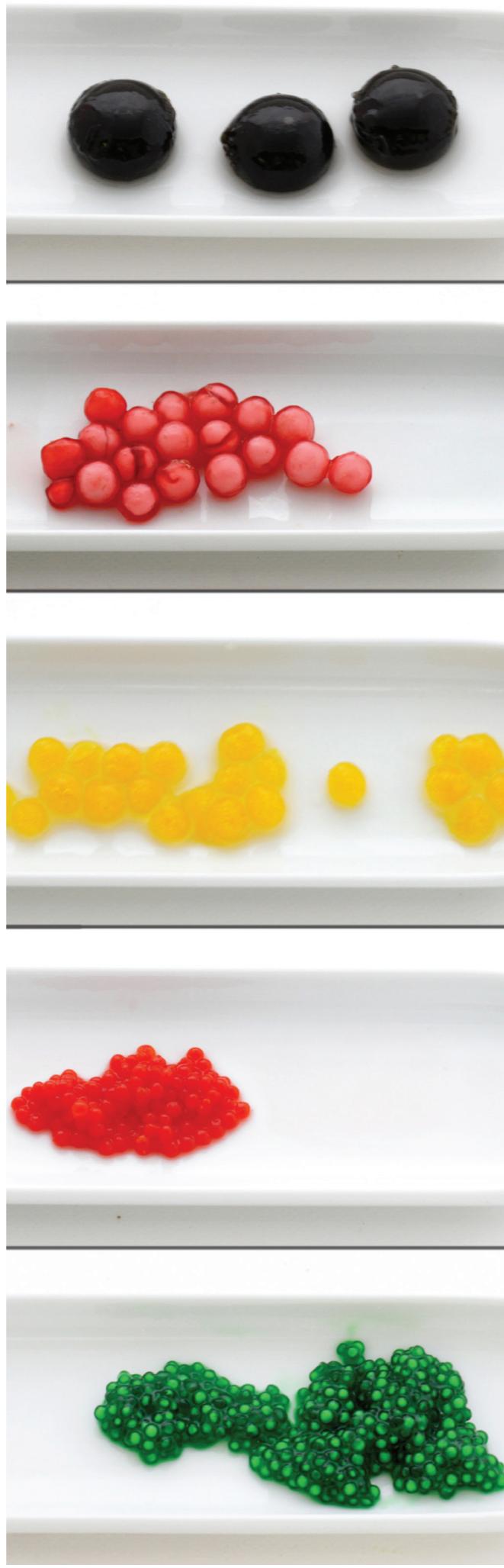
At Dinacon we research a method to develop a flavor structure elements consisting of several discrete (small) flavor voxels (such as tapioca or spheres). Then, using small modification to the basic flavor structure we create a pattern of flavor that evolve and change gradually in a dish (tom-yum, salad,



Their Digital Gastronomy Process worked by analysing local foods and extracting and segmenting basic elements such as texture, color, and flavor.

They mapped out an entire meal from appetizer to dessert utilizing combinations of these “flavor voxels.”

The end result was a deconstructed modernist meal letting you traverse the plains of thai flavors in new ways.



DINNERCON RECIPE BOOK

Excerpts from Recipe Book and Foraging Guide
Ahac, Grace, Jennifer, Huiying, Michelle, Pom

This compendium is a on-going documentation of meals cooked at the 2018 Digital Naturalism Conference in Koh Lon, Thailand. Although many of the recipes are Thai or Thai inspired, the compendium also includes international recipes from DiNaSaurs around the world as well as take-home adjustments to the recipes.

The recipes are separated into foods prepared on land (at the Baan Mai Resort) and at sea (aboard the SY Diva Andaman).

Food preparation at DiNa Con is hardly ever precise, and some recipes do not even include measurements yet—feel free to experiment and document your own versions!

Big thanks to the Andrew Quitmeyer, Tasneem Khan, and Yannick Mazy for organizing this amazing conference!

-Ahac, Grace, Jennifer, Huiying, Michelle & Pom

Get the whole book for free at:
<https://www.dinacon.org/2018/10/08/dinnercon/>



SEA

Belgium Breakfast ...	15
Yannick's Marzipan Delight ...	16
Grace's Buuz ...	17
Mediterranean Noodles ...	18
Sardines Loving Rice ...	19
Tasneem's Paneer ...	20
Black Sticky Rice Pudding ...	21



Forager's Guide to Koh Lon ... A



LAND

Som Tum Mamuang (Mango Salad) ...	1
Khao Yam (Fragrant Rice Salad) ...	2
Miang Kham ('One Bite' Wrap) ...	3
Fried Fish with Tumeric Chips ...	4
Grilled Fish in Banana Leaf ...	5
Shrimp Pad Thai ...	6
Dani's French Muesli ...	7
Beach Cheese Smørbrød ...	8
Khanom Thom (Coconut Mochi) ...	9
Pom's Mango Jelly ...	10
Ant Liquid ...	11
Ant Miang Kham ...	12
Ant Fritters (Omelette) ...	13
Anty Spirits ...	14



Weaver Ant Miang

Ant and Coconut Leaf Wrap

The combination of coconut and ants produces a subtly sweet and sour flavor, covered mostly by the peppery taste of the leaf. However, the texture of the coconut shreds fail to hide the hairy crunch of the ants.

Betel or Pepper leaves

Shredded coconut

20 Weaver ants

1. Place betel leaf on the palm of your hand.
2. Put a pinch of coconut onto the betel leaf.
3. Add the ants on top.
4. Wrap up the leaf and consume immediately.



Centella asiatica

Asiatic Pennywort

Entire plant can be used for healing wounds, burns, etc. Juice can be taken for its cooling properties. It can also be used to improve appetite, aid digestion, and to treat sores and ulcers.



Ipomoea pes-caprae

Beach Morning Glory

Found in sandy conditions, the juice of the leaves are used to treat sting ray and stone fish stings. They can also be boiled with coconut oil to treat sores and ulcers.



Belimbing

The fruit is too acidic to eat raw, but



SOIL/EARTH/DIRT AND POOP?

Connections in:/out Reflections on my time at DINACON
Huiying Ng (based on maps by Craig Durkin)



Working on maps inevitably gets me thinking about connection and connectivity – the links between relations spatial and biological, but also the human and social. DINACON is a big blobby, lovable mess/h, a meshy, net-like structure of parts and people moving in and leaving bits of themselves behind.

A little like this snail leaving its bits on my palm:

Or like a bunch of us adding to the DINACON google map of plants which Craig Durkin started!

I came to DINACON to work on creating simple soil testing kits for gardeners. But the more I talked to people, the more I started doing: thinking about a soil and elevation map, playing with plant impedance and conductivity, learning about Arduino coding (and making something – scary!). I was way outside my comfort zone of the social sciences. But it was all interconnected with the social sciences and humanities; every moment of activity was culture forming quietly, mostly unobserved. When I left, I found myself thinking about the DINACON experience while finishing up my maps. There's a section from chapter 1 of *The Windup Girl* by Paolo Bacigalupi which I love, and which is all about connection.

A man finds an unfamiliar fruit in a market in Bangkok, in a future world where food production has become entirely driven by GM-food companies. He stops to examine it. The fruit seller talks to him, "seeking connection". Nothing touches him in this wet and bustling market as he thinks through his mental repository of "flowers and vegetables and trees and fruits [which] make up the geography of [his] mind" – "nowhere does he find a helpful signpost that leads him to identification". And then, he eats it. As he bites into it, he finds himself tasting the past in this "slick translucent ball". Suddenly, "a fist of flavor, ripe with sugar and fecundity.



The sticky flower bomb coats his tongue...
The shell-shocked moment of flavor – real flavor – after a lifetime devoid of it." He's found not a discovery but a resurrection, a connection to the past through flavour. History and possibility and the future shift all at once.

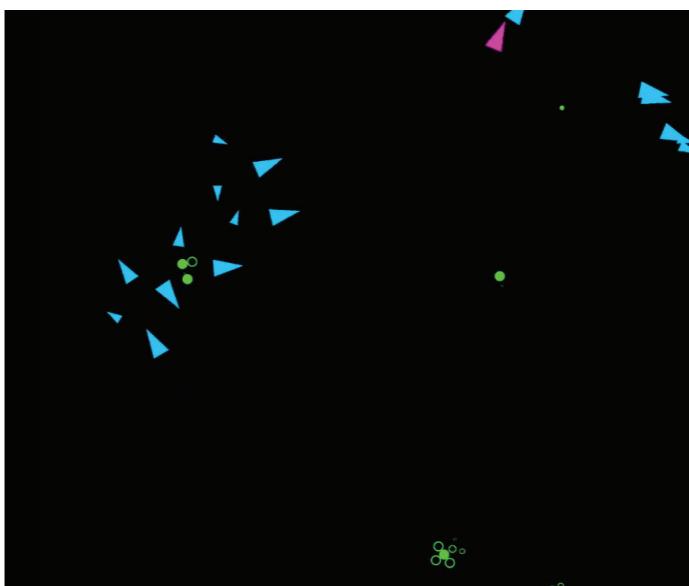
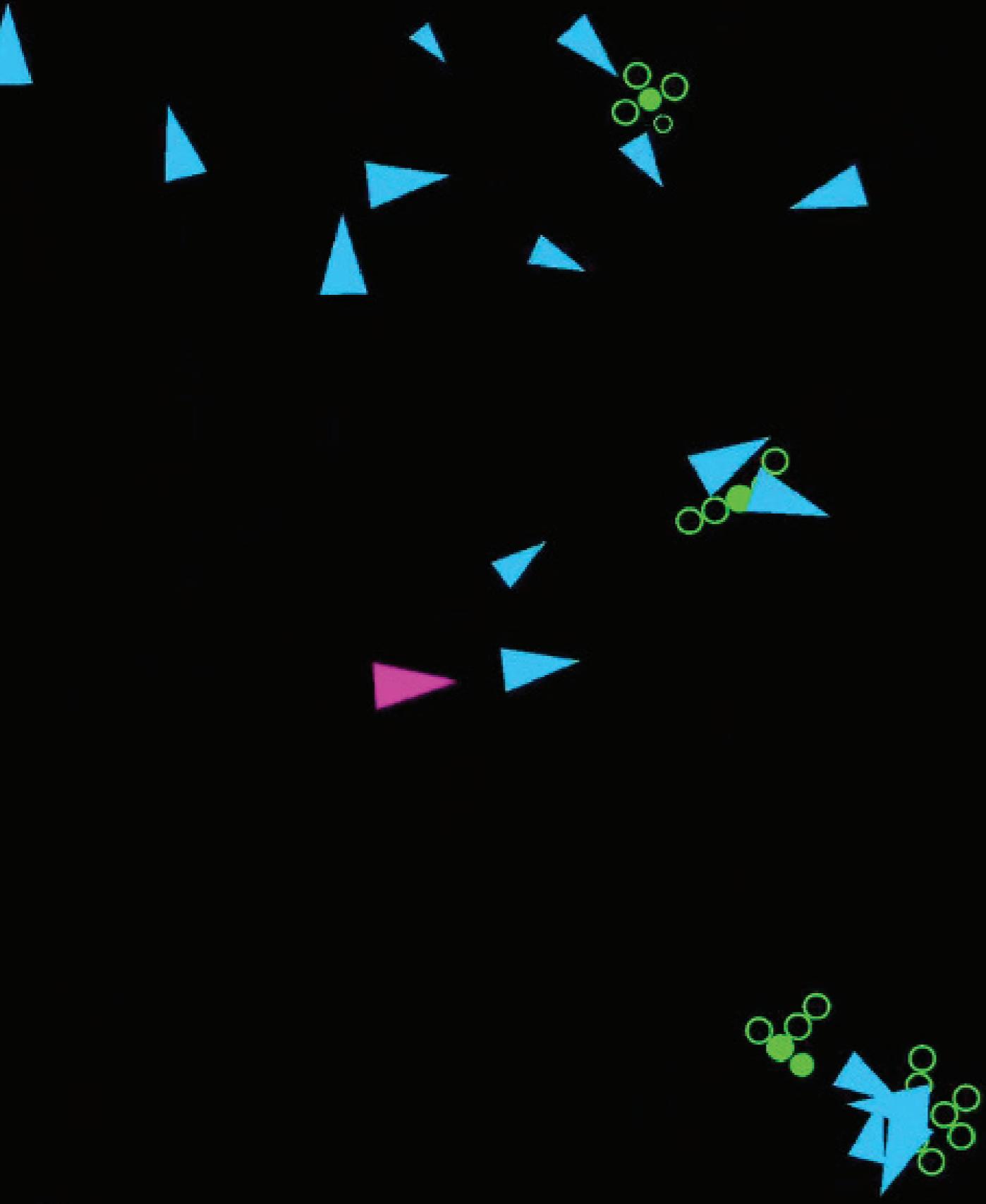
I love this passage for so many reasons, but most of all, I think it was because I had no idea what this fruit was – so many hints, so many signs, but we just keep guessing until bang, it hits us.

Food and poop are grossly different. But consumption and excretion aren't all that far apart – we might say they feed (!) one another. It's easier to see this with abstract poop. We poop ideas for instance much faster than we visibly excrete what we eat. And we pay a lot more attention to ideas, too: it's gross to think of pooping ideas; no, we generate ideas instead. Granted, idea generation and excretion are a little different – generation tends to be more valuable than excretion. So we go on circling through this logic, and for whatever reason, even though poop and excretion is the basis of life, we rarely think of our ideas as the mental excrements of daily life! Perhaps this is because sewage and toilet matters aren't very nice to think about or work around. But they are the measure of how well a system functions and renews itself: whether measured in the outhouse of a cabin, the blackwater

MORE PROJECTS

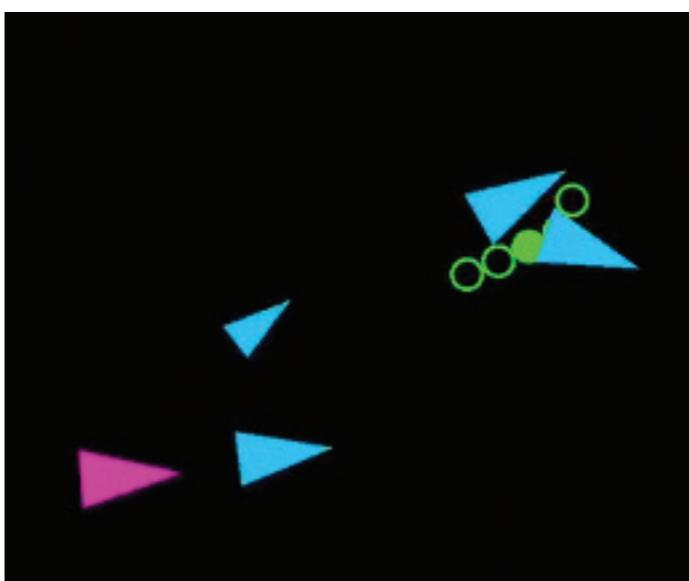
ECOSYSTEM SIMULATION

Marc Huet

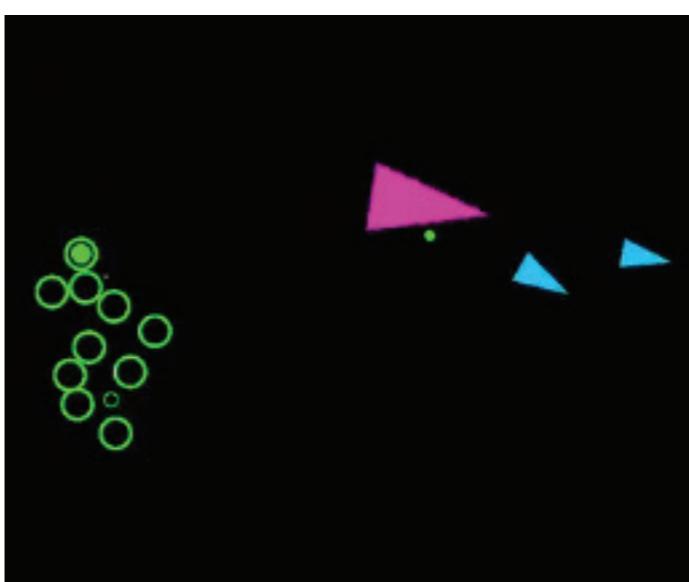


My goal for this simulation was to be able to abstractly demonstrate inter-dependence in an ecosystem. It isn't meant to be an accurate model of any real ecosystem, but rather replicate that specific property of ecosystems in an easily observable environment. This simulation uses 3 types of actors, and unless all 3 are present the patterns by which they interact will quickly collapse.

Flora, which propagates outwards and sometimes generates "seeds" (solid green circles). Flora can only spread if its seeds are carried off by an herbivore. Each node has a lifespan and will eventually die if it isn't eaten first. Without Flora, herbivores will die off because they have nothing to eat, then carnivores will die off because there are no herbivores.



Herbivores, which eat flora and will reproduce if they consume enough. If they happen to eat a seed, it will drop once the herbivore has traveled a certain distance away and start a new plant. Without herbivores, flora will die off because it cannot spread, and carnivores will die off because they have nothing to eat.



Carnivores, which eat herbivores and also reproduce if they consume enough. Without carnivores, flora will die off because they will be eaten by herbivores faster than they can propagate, and herbivores will die off because they will kill their own food source.

One step that's missing from this food chain is decomposition. Decomposers would be responsible for turning dead material into nutrients that plants need to grow.

PALM READING

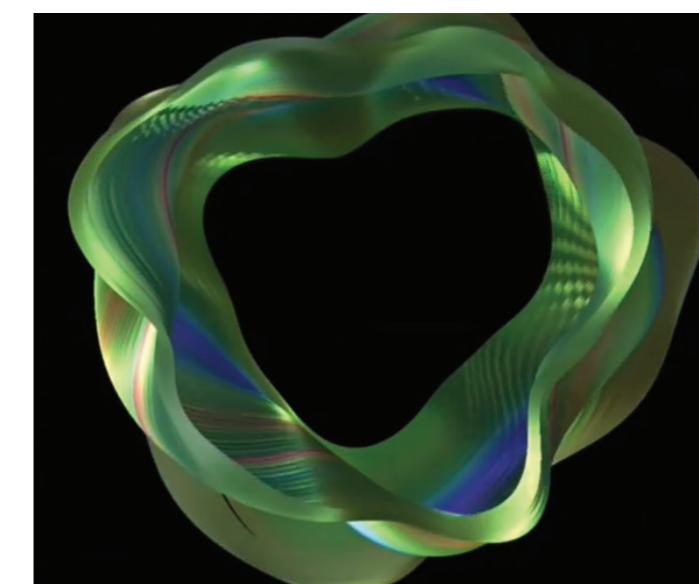
Jessica Anderson and Sebastian Monroy



P-188

Proceedings of the First Digital Naturalism Conference

188



Koh Lon, Thailand, 2561

PROJECT // Palm Reading // generating visual art in Unity from the action potential measured from a palm tree on Koh Lon island using the Plant Spiker Box.

BIO // Sebastian + Jessica make digital art together at their studio called Into Outof in Atlanta [[online presence forthcoming]]

Sebastian has an MS in Computer Graphics and makes generative art and interactive art in Unity. Check out his work @smokelore

Jessica has an MS in Digital Media, helps direct the Spelman College Innovation Lab, and tries to keep it real. She claims to be a thinker + maker + designer + lover. That means she's head-first in concept art, fabricating installation stuff like domes and projection surfaces, designing interactions that are meaningful, and loving with her whole heart. Check out Jessica's work jessicology.com

//////////

We were inspired by @DrBeef on twitter //

https://twitter.com/DrBeef_/status/965796672943964167

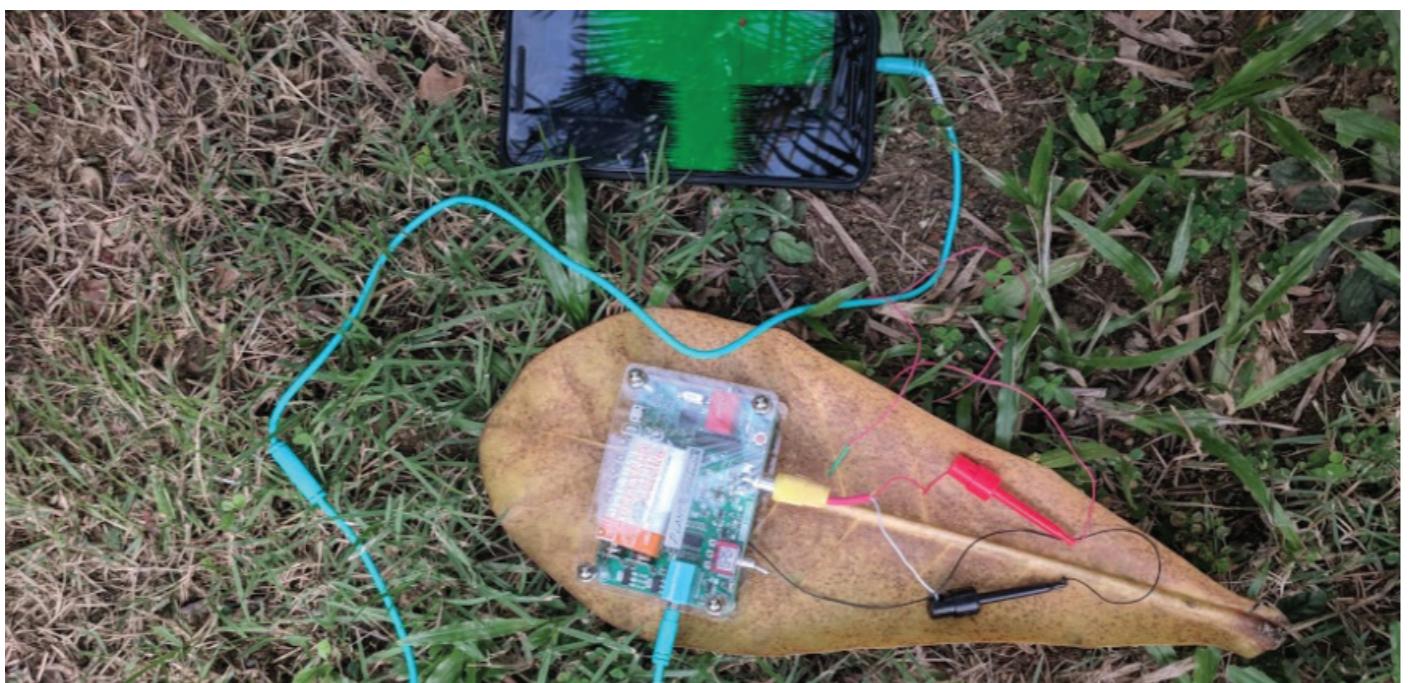
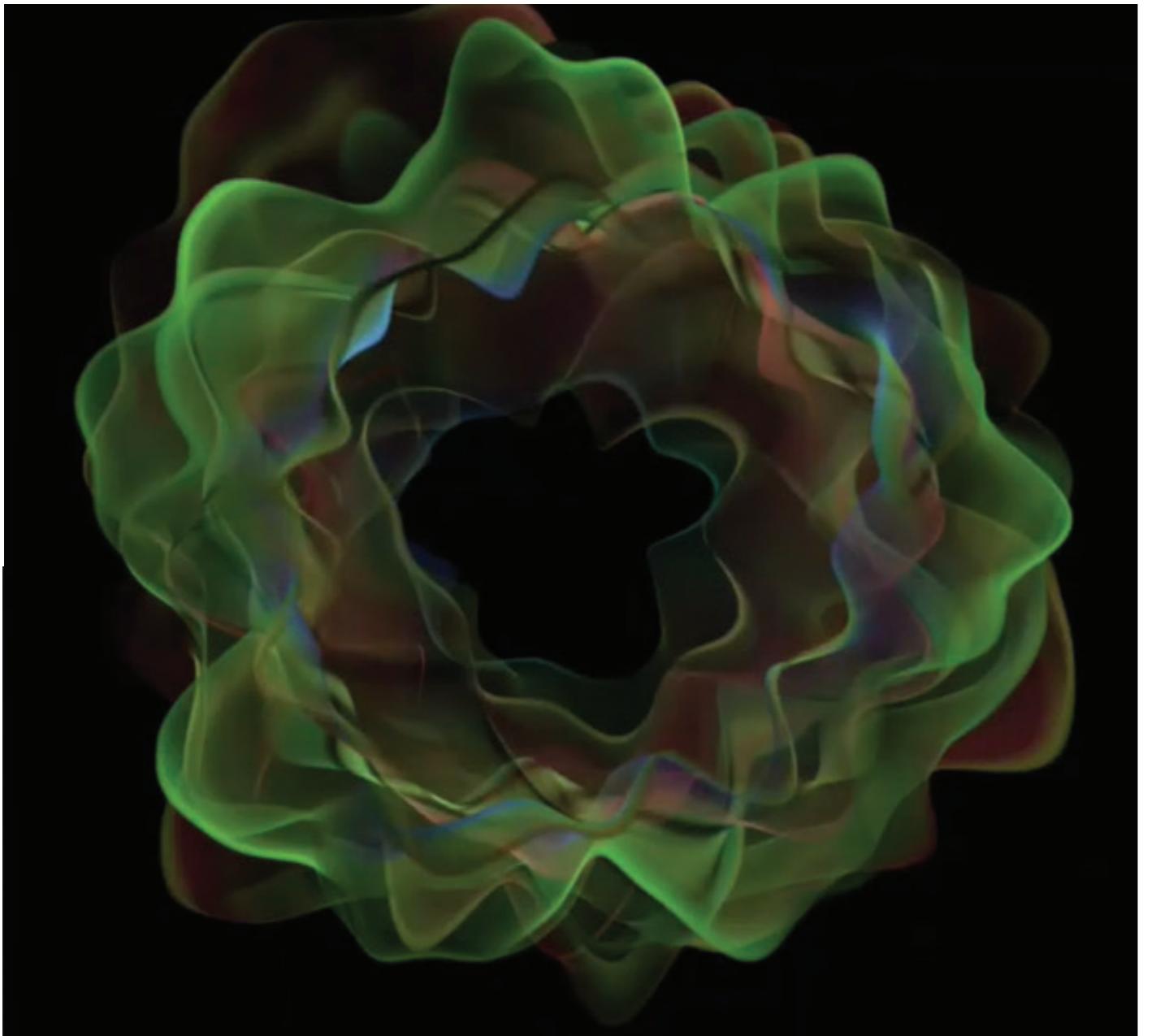
We're inspired by the bio-diversity on the island, and how different tropical plants might express themselves through the patterns in their electrical activity.

To understand how to get the most accurate measurements, we used non-invasive extracellular recording using Backyard Brains' Plant Spiker Box.

We're using this thread on electronics stackexchange to learn about how to measure the electricity from foliage.

<https://electronics.stackexchange.com/questions/85342/detect-electrical-signals-from-plants>

P-189



We're also using a paper by Jorg Fromm & Silke Lautner "Electrical signals and their physiological significance in plants" (2006) to learn about plant bioelectricity.

<https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1365-3040.2006.01614.x>

//////////
We test the hardware at home. This gives you an idea of what the measurements look like on screen. The output is an audio file.

Spiker box prep on site

Waterproofed and ready for monsoon (in a ziploc kind of way). Here, the ground wire is pinned into the trunk and the sensor wire is wrapped around a frond that is lower on the tree. The board is zip-tied to the trunk. We got a good, pretty clean readings from lower, middle, and higher fronds.
We tried recording from the board into a field recorder with an audio cable. That data was way too noisy. We tried recording with the app using my Android phone — not quite readable. Finally, we used the USB to record right into the laptop. This gave the cleanest results.

//////////
We wanted to record for days at a time, but the constraints put us at recordings of 3-5 hours at a time.

Because the recording is a wav file, Sebastian parsed the data before we had values that we could use.

Tasneem got a shot of us in the act!

After moving out to the SY Diva Andaman workspace, we were inspired by the movement of the waves in and out, leaving saturated traces, and iterated through a few visual styles.

//////////

These are some of the results, with the plant's electrical data determining the colors on the first video and color along with more attributes on the second as well as lighting.

//////////

And the best part is sharing our process, wandering, and inquiry with the creative, intelligent, open-minded fellow DiNasaurs

////////// THE FUTURE //////////

We want to complete the same experiment with a potted palm that lives on our terrace in Midtown Atlanta to compare how a city palm and a jungle palm might differ or resemble one another when their electrical activity is compared using the same parameters.

We want to print these Palm Readings and show them off.

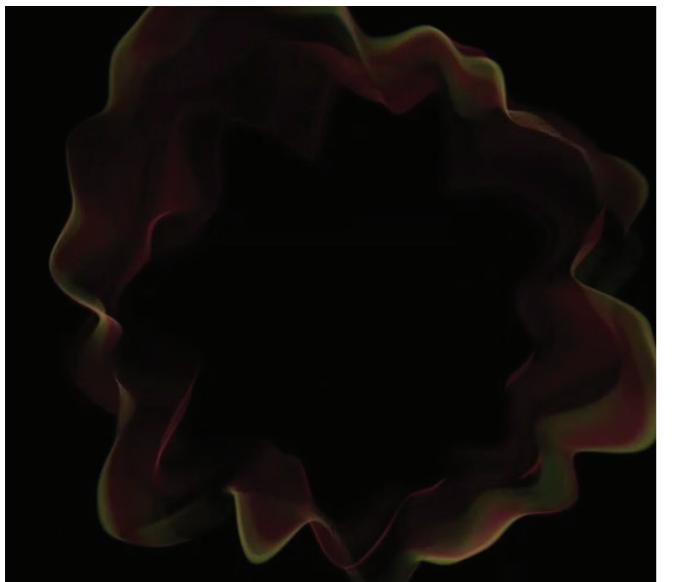
We'd like to use the art prints as a target for an augmented reality component that shows the animating 3 dimensional aspect of the piece. Stay tuned. We'll be kicking off the urban Palm Reading soon!

//////////

ALTERNATE EQUIPMENT LIST (Peep David Bowen's project for this hardware set up)

- ~ Greenlee DM-510A True RMS Professional Plant Digital Multimeter
- ~ DTECH 10 Feet USB 2.0 to RS232 DB9 Serial Port Adapter Cable with FTDI (10[] wired connection for DMM to PC display — maybe a longer one? wireless?)
- ~ 4mm Ag/AgCl electrode discs
- ~ Spectra 360 Electrode Gel

//////////
LET'S TALK! JESSICAXANDER-SON@GMAIL.COM



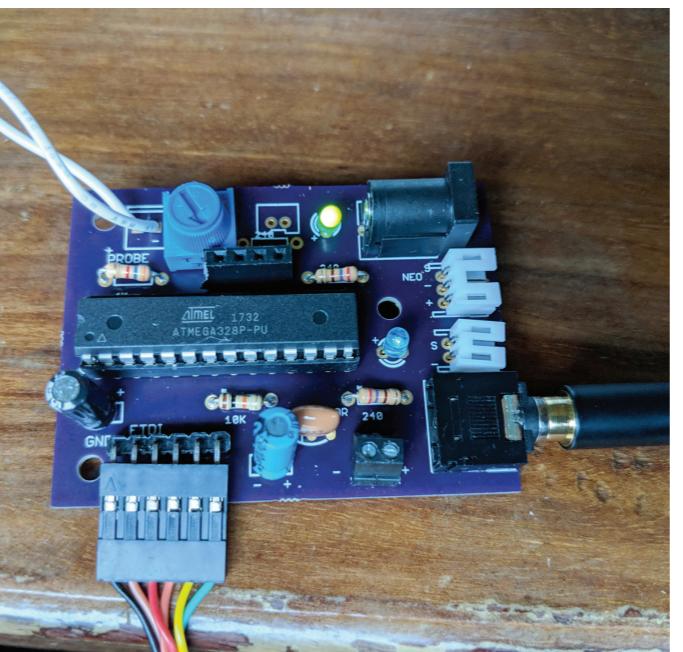
DINASYNTH QUARTET

Seamus Kildall



P-194

Proceedings of the First Digital Naturalism Conference



Koh Lon, Thailand, 2561

At Dinacon 2018, Scott (Seamus) Kildall prototyped a new project called DinaSynth Quartet, which is a live audio-synth performance between a plant, the soil, the air and the water in nature. This quadrophonic melange emits a synthetic soundscape that interacts with the buzz of cicadas, the croaks of frogs and the songs of the birds. By endowing hidden data in the natural environment with digital “voices,” the installation invites viewers into the jungle to experience digital artwork that almost always exists in the built environment.

My response to my time at Dinacon was to find a way to fuse the digital with the natural, seeking both a collaboration and future development around the idea of making chance orchestra arrangements. This experiment builds on my previous work, Sonaqua, which is an interactive installation that sonifies water quality.

These four “players” connect to sensors that modulate software synthesizers with embedded electronics. The plant uses electrodes, ground to soil sensor, water to electrical-conductivity sensor and air to humidity. Each one uses specific code that is active on one of my custom Sonaqua boards, and, each player has its own speaker so that you



P-195

can spatialize the sound by walking around the outdoor installation space

My custom Sonaqua board, which uses the ATMELO 328-PU chip
The humidity reading varies the least and activates the a baseline, while the plant sounds like a skittering voice, as its voltage readings constantly shift around. The water has the high-pitched violin sound and the soil emits the melodic slow waves.

In future iterations, I will develop sculptural containers for these and improve the sound-synthesis. Ideally, they would play at various festivals or other outdoor spaces.



POM'S PERFORMANCE

Eco Artist Pom



Photo by Umeed Mistry



At the culmination of dinacon, Pom, our intrepid node leader, put on a performance she had been crafting for the previous 7 weeks. In this performance she emerges as a sea turtle living in a world of garbage (and in fact made entirely out of garbage).

The turtle comes from the sand and prepares a simple meal for us. She then drifts out into the sea and dissolves into the sunset. The animating body, Pom, secretly drifts away underwater, and we are left with the floating carapace filled with plastic bottles gently clonking in the waves.

Photography by Umeed Mistry



Koh Lon, Thailand, 2561



Photo by Umeed Mistry

DIY MARINE MICROBES

Kitty Quitmeyer



As part of a National Academies of Science grant to raise awareness of microscopic ocean creatures via craft, Kitty Quitmeyer (wellreadpanda.com) made a whole set of instructions to make your own marine microbes.

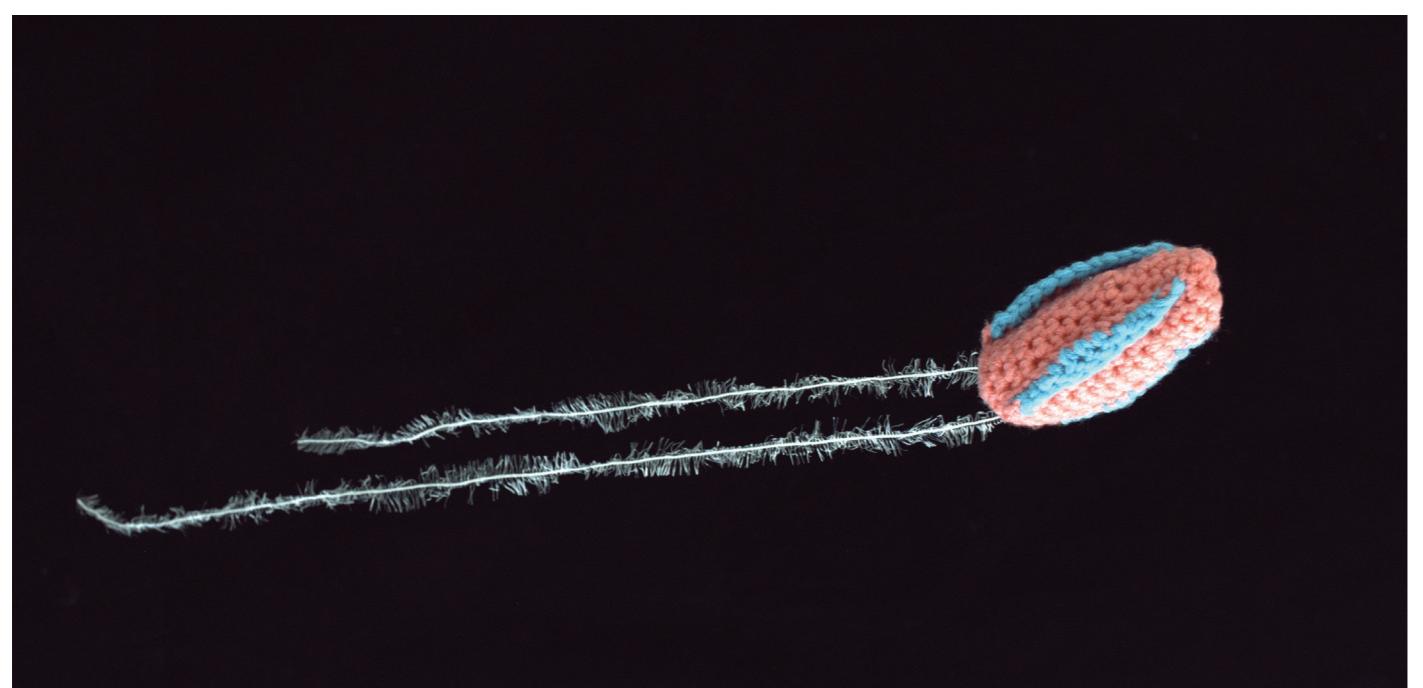
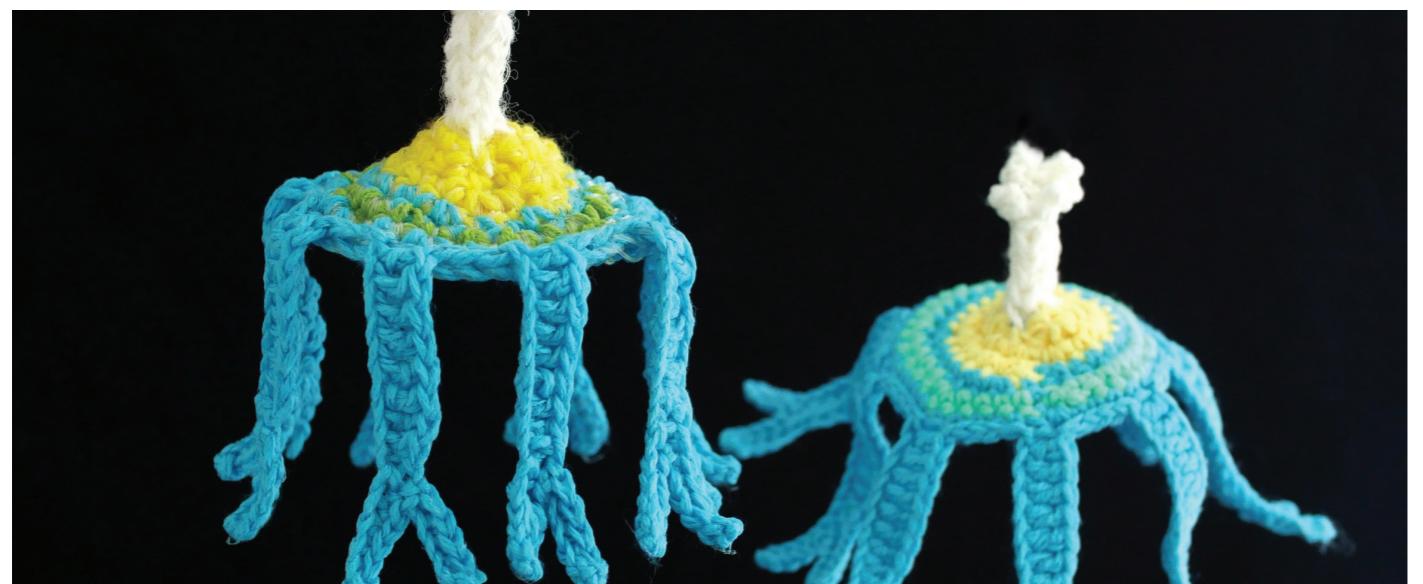
There's even one for making a glowing bioluminescent dinoflagellate! She crafted these during her residency at the Digital Naturalism Conference to get first-hand experience with these neat tiny creatures.

Skill level: Intermediate, requiring some simple electronics"



These were created by Kitty Quitmeyer (www.wellreadpanda.com). Research reported in this video was supported by the National Academies Keck Futures Initiative of the National Academy of Sciences under award number NAKFI DBS17. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Academies Keck Futures Initiative or the National Academy of Sciences.



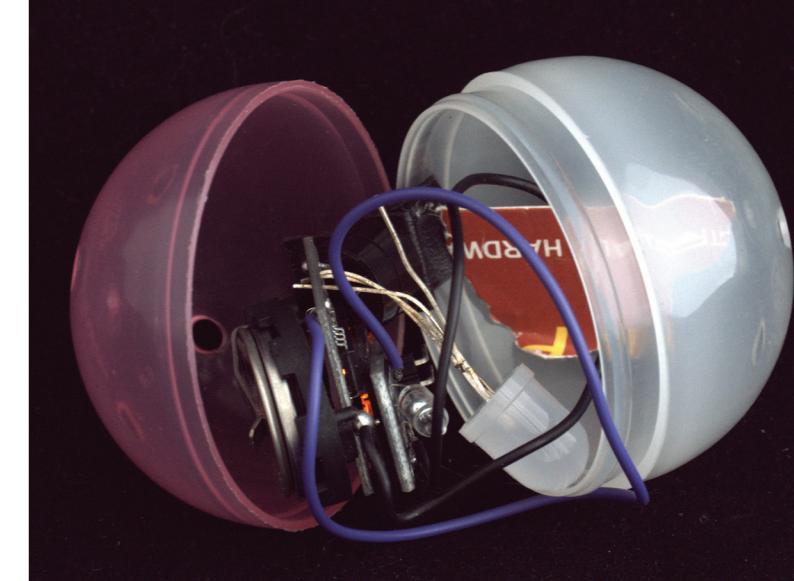


GLOWING DINFLAGELLATE

Kitty Quitmeyer and Andy Quitmeyer



Have you ever been on the shore and seen the water start to glow, seemingly magically? This effect is often caused by dinoflagellates, tiny protists that sometimes glow blue-green when agitated by the tide, an oar, or a human body. Learn how to make your own with simple crochet and some electronics! This tutorial will show you how to make a dinoflagellate that glows and fades when shaken, but you can always leave out the electronics if you'd just like to make the shape of a dinoflagellate.





360 DEGREE CAMERA TRAP DEVELOPMENT

Daniëlle Hoogendoijk

Camera traps? Awesome! 360 degree camera traps? Panoramically awesome! How to?

Find an Andy (I recommend the Quitmeyer type), chat and fantasize, visualize, and go to work ->



Recommended elements for creating, testing and enlightening the (scientific) world with this camera trap:

- An awesomely weird creative atmosphere, stuffed with wonderful people (Digital Naturalism Conferences and PIF camps are ideal)
- An over-hacked (read: pretty much broken) 360 degree camera (in this case a Ricoh Theta S.) including a waterproof housing
- A Stig to repair/ re-hack the camera
- All the scientist, artists and (field) biologists within range to brainmonsoon and work with
- A wide variety of sensors to booby-trap a part of Mother nature (ask kindly first). For example:
 - o PIR
 - o Sound
 - o Ultrasonic
 - o Laser tripwire
 - o Tilt
 - o Ball switch
- An Arduino or something comparable for the sensors to talk to the camera, including a battery
- Libraries for us to talk to the Arduino and sensors
- Soldering iron, hot glue, shrink-

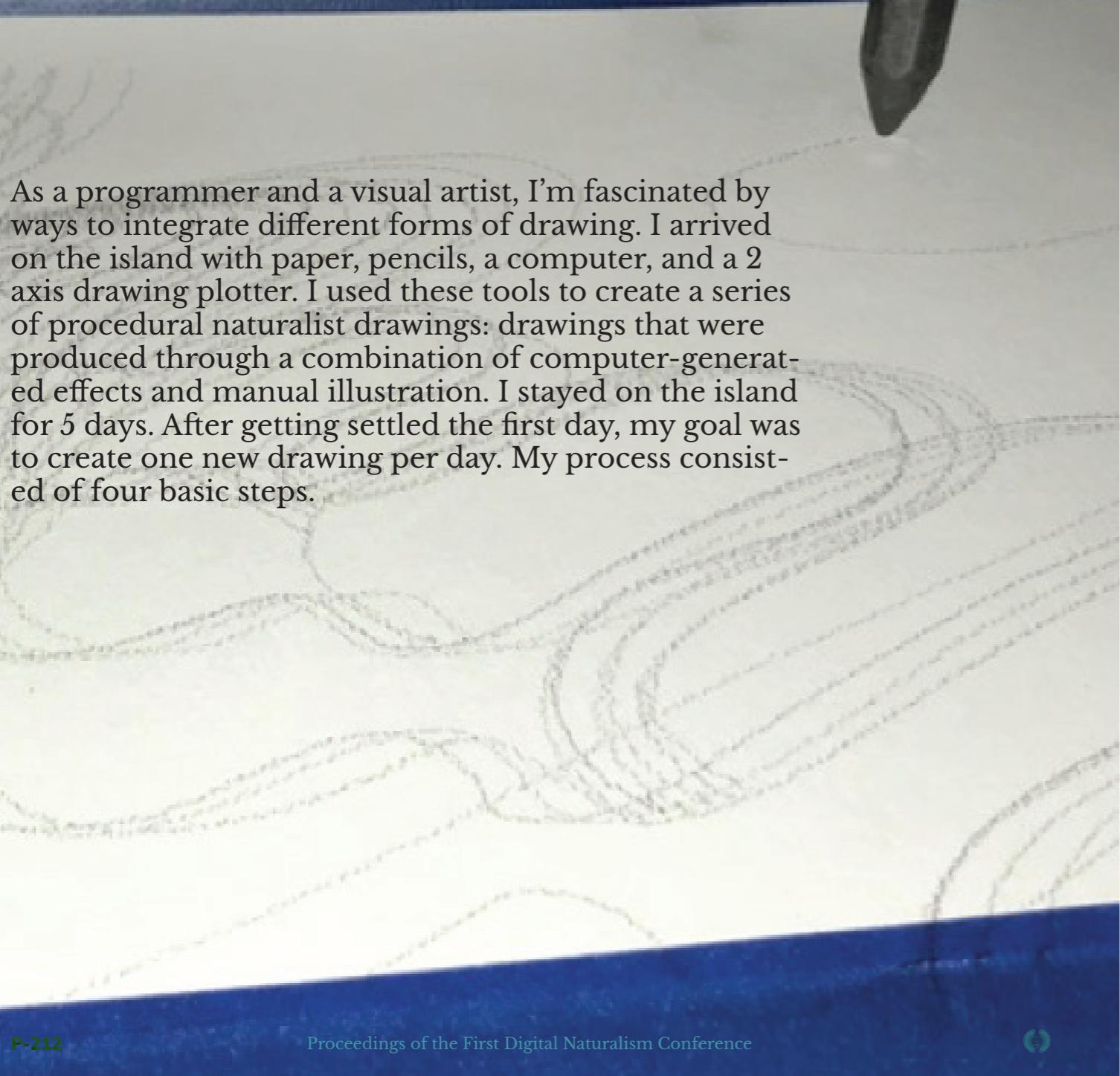


wrap and lots and lots of rainbow wires and such

- A waste plastic bottle to build a stylish, waterproof(ish) case for the Arduino
- A bamboo pole with a sharp end to place the device in the field
- Some befriended rats or other creatures without Scopophobia, and/or some kind of robot packed with heat sensors
- Any kind of bait, including down-sized fairground attractions and music
- A secret jungle lair with a hammock to watch all the action in situ
- A smartphone or computer or something to watch and process all the action
- Chat and collaborate with behavioural and computational neuroscientists (a Jonathan in specific) and others that are interested in exploring the potential of this awesome device
- A Tristan to write a section about the camera trap for the Huffington Post for promotion purposes
- And finally, the same Andy again to make an awesome book about the Digital Naturalism Conference under a 'Creative Commons Share-Alike Attribution', which facilitates the information about this camera and all other proceedings to spread across the globe.

PROCEDURAL NATURALIST DRAWINGS

Jennifer Jacobs



As a programmer and a visual artist, I'm fascinated by ways to integrate different forms of drawing. I arrived on the island with paper, pencils, a computer, and a 2 axis drawing plotter. I used these tools to create a series of procedural naturalist drawings: drawings that were produced through a combination of computer-generated effects and manual illustration. I stayed on the island for 5 days. After getting settled the first day, my goal was to create one new drawing per day. My process consisted of four basic steps.



Step 1: Observation

I spent time walking around the island looking for forms to draw. I particularly focused on trying to find organisms or objects that would be compatible with some form of procedural creation. Complexity, fractal patterns, or symmetry are all possible to represent relatively easy with code, so I looked for organisms with similar properties.

Step 2: Code

After settling on an organism to draw for the day, I then used Processing to write a simple program that produced forms that represented some aspect of that organism. Because coding is a somewhat anti-social activity, I tried to keep these coding sessions short- no more than a couple hours at most.

Step 3: Digital Drawing

The programs I wrote in Processing were designed to function essentially as drawing tools in that they were designed to generate some form of procedural pattern based on mouse input. By hooking up a tablet and stylus to my computer, I could use the stylus to create different procedural drawings that transformed my manual line. I exported these drawings as vector PDFs.

Step 4: Plotting

I experimented with different pencils



```

    ...
    float levels = 5;
    ArrayList<DShape> shapes = new ArrayList<DShape>();

    ArrayList<PShape> palmSegments;

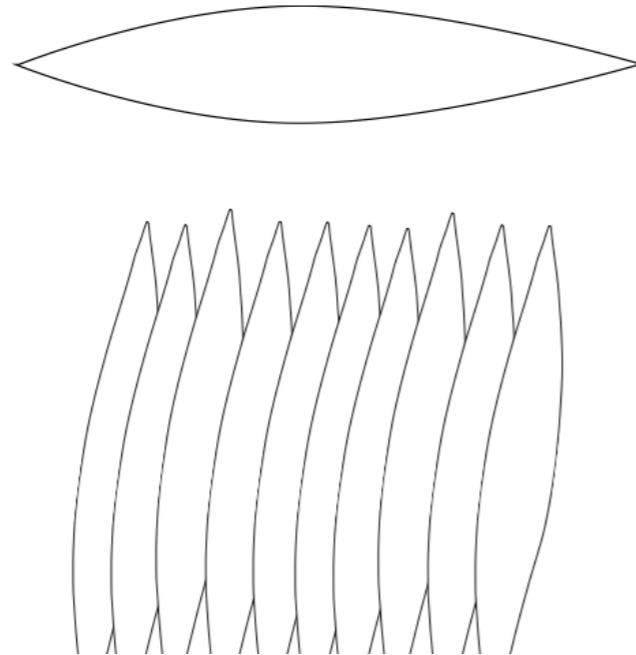
    color bambooColor;

    int segNum = 7;
    float scale = 0.5;
    float segWidth = 99;
    float segHeight = 55;
    float curX = -1;
    float curY = -1;
    float distThreshold = 10;

    void setup() {
        size(800,1024,P3D);
        background(255);
        smooth();
        drawingManager = new DrawingManager(this);

        palmSegments = new ArrayList<PShape>();

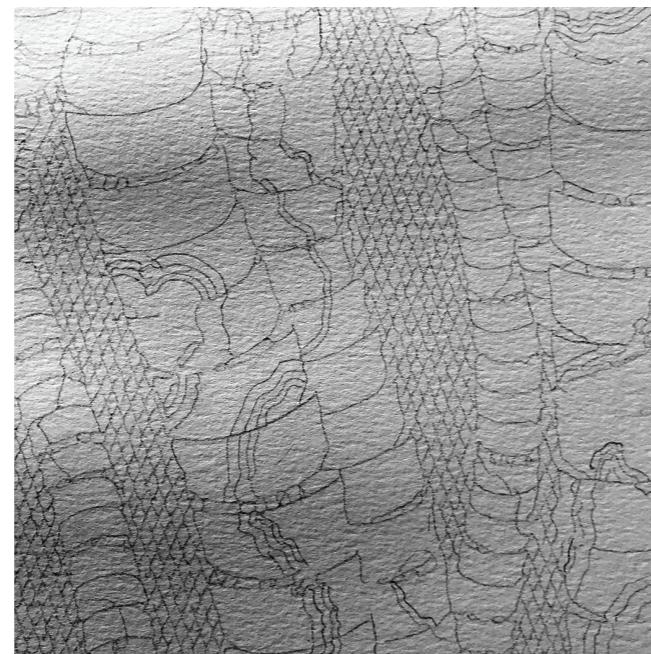
        for (int i=0;i<segNum;i++){
            String palmString = "leaf"+(i+1)+".svg";
            PShape palmSegment = loadShape("segment1.svg");
    
```



and a 2-axis plotter to quickly generate physical drawings of the procedural forms I created in Processing. I love the plotter for its speed and ease of use, and also for the fact that you can use a wide range of different drawing media with it. It works well with pens, pencils, and even can be modified to support paint brushes- all tools that one can also use by hand. Using the plotter is also often a social activity. It's highly visible without being disruptive or noisy, and people tend to come by and ask about it, or watch it while it works. I really like this quality.

Step 5: Manual Drawing

Once the drawings had been plotted, I used a variety of different pencils to manually finish them- adding in shading and different texture effects. While it would have been possible to add some of these effects with the plotter, the process of manually drawing on top of the plotted drawings gave them a different quality. Unlike coding and plotting, which requires a linear-planning intensive process, drawing by hand enables me to work intuitively and serendipitously. I can quickly try something out, and if I like it, continue in that direction. Each stroke informs the next. In addition, coding or the plotting required access to electricity, whereas manual drawing enabled me



to work anywhere on the island. By the end of my stay, I completed 4 drawings.

Drawing 1: Sea foam and waves

My first drawing was an abstract composition that was largely inspired by the waves and foam on the shore of the island.

Since this was the first drawing of the series, it was the most experimental. I started with a program that repeated and scaled a single stroke drawn with the tablet. I drew with this program with wavy- undulating strokes, then plotted a series of these drawings with a rough charcoal stick.

I spend some time with a 6B pencil



darkening corners of the plotted drawing before placing the drawing under the plotter a second time and plotting a second series of lines (blue) upon the original. I then shaded and reinforced some lines manually, producing the finished result.

Drawing 2: Fern

Plants are often extremely algorithmic. Inspired by the numerous ferns on the island, I wrote a program in Processing that repeated a simple leaf shape along a hand drawn line, and mirrored it on the reverse. I modified the program so that it scaled the leaf shape so that they grew larger towards the center of the line, and smaller towards the end. This way, I could quickly draw a variety of

different fern fronds. Rather than plot multiple ferns, I decided I liked the simplicity of a single frond. I plotted it with a light pencil and shaded the back of it by hand to create a contrast against the white paper.

Drawing 3: Palm and Lichen

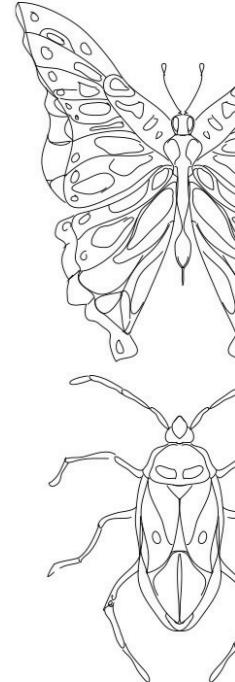
By the third drawing, I had started to get more ambitious. I loved the patterns the lichen made on the bark of the palm trees around the island. I wrote a program that repeated palm segments along a hand drawn path. I then wrote a second program that automatically generated lichen-like shapes by creating an irregular outline, and then repeating and scaling out that outline around the perimeter to create a set of rings. I used Perlin noise to create the variation in the ringed sections. The math to generate the lichen took a little while to figure out, and as a result, I spent longer coding this pattern than I would have liked.

To take advantage of the plotter's capabilities I added a complex hatched-background to the vector illustration. Below is the finished plotted result.

I wanted to use manual drawing to create sense of depth in the drawing by shading the smaller stalks a darker tone and keeping the larger stalks light. I liked this effect, but realized it didn't work well with the complex hatched background, so I ended up removing it and shading it dark. Yet another great thing about working by hand after plotting- you can make changes at will, and in an improvisational fashion.

Drawing 4: Butterfly

By the final day, I had gotten slightly behind. The shading on the palm and lichen piece took longer than expected and I had to prepare a presentation for the evening. Therefore I decided to rely on a simple but effective technique for the last drawing: bilateral symmetry. I wrote a program that mirrored



and repeated whatever I drew by hand on the horizontal axis. I then used this program to draw two insects- a butterfly and a beetle.

I ended up only having time to plot and shade the butterfly. I left one side of the butterfly plotted but unshaded. I liked this contrast. Sometimes simple is best.

Next morning, I packed, had breakfast, and took the boat off the island. Dinacon was a wonderful, unique, experience, filled with lovely generous people. I can't thank Andy and Tasneem enough for organizing it and letting me be a part of it.



DINACLOCK

A time-correct view of Chalong Bay

Josh Michaels - joshjet.net



I spent my time on the island filming time-lapse photos of Chalong Bay. In total I filmed 6 days of photos. From that I took the best sequences to create “Dinaclock” – a simple web page showing an image from Chalong Bay that matches the current time where you are. Simply open the web page and you’ll get a refresher on the experience.

You can visit Dinaclock here:
<http://bit.ly/dinaclock>

You can leave the web page open and over time it will continue to match the time where you are. You can set it as the default home page/new tab in Safari so you experience it every time you open your web browser. I’m working on a Chrome plug-in.

The Challenges of Filming on Koh Lon
Aside from completing the time-lapse sequence, my secondary goal was testing my hardware for survival under the sometimes intense weather conditions that can be found on the island. I definitely got my fill of challenging weather and will be more prepared for future endeavors .

As one of the first storms I experienced ramped up I decided the camera would need reinforcements. In the time it took to go into my hut and come back the winds had greatly picked up, and by the time I got to the camera it was in the air on the way to a relatively soft landing on its top.

Among other lessons, the key one I learned here was that any filming done in areas with wind this strong requires the camera to be physically tied or clamped to a structure. Weight bags just aren’t enough when winds can get up to 60-70mph.





time to go to sleep on the upper deck



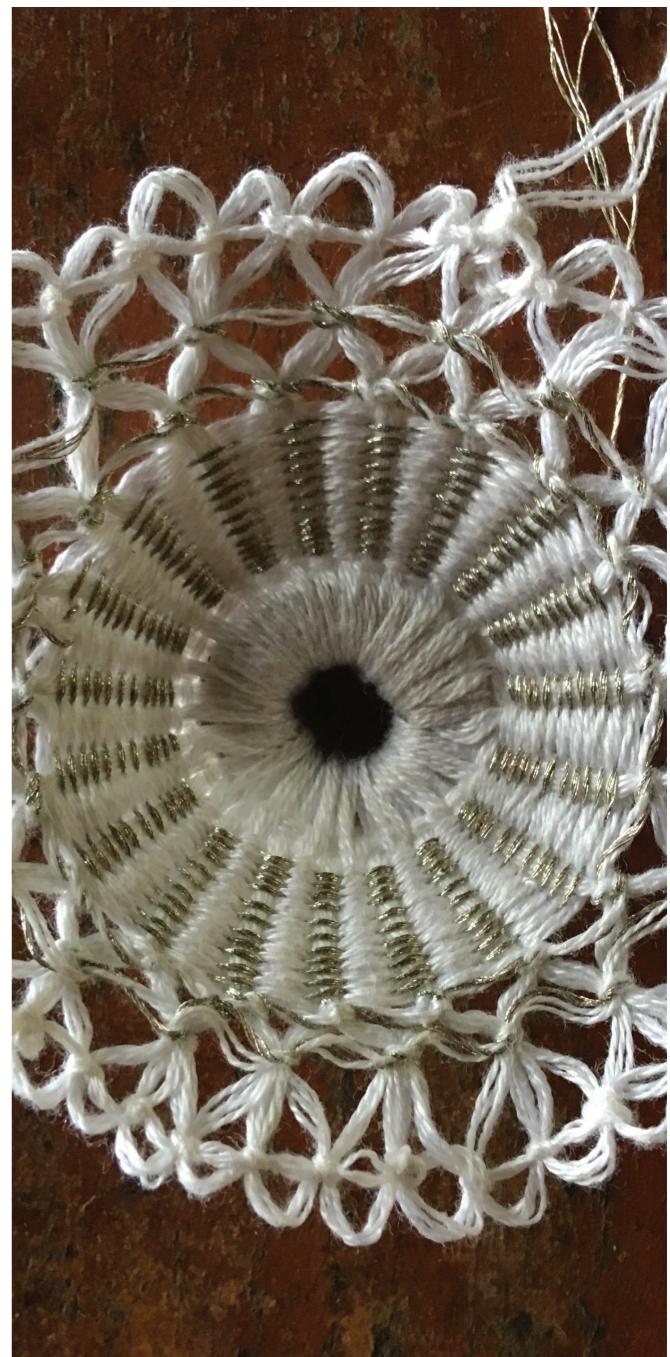
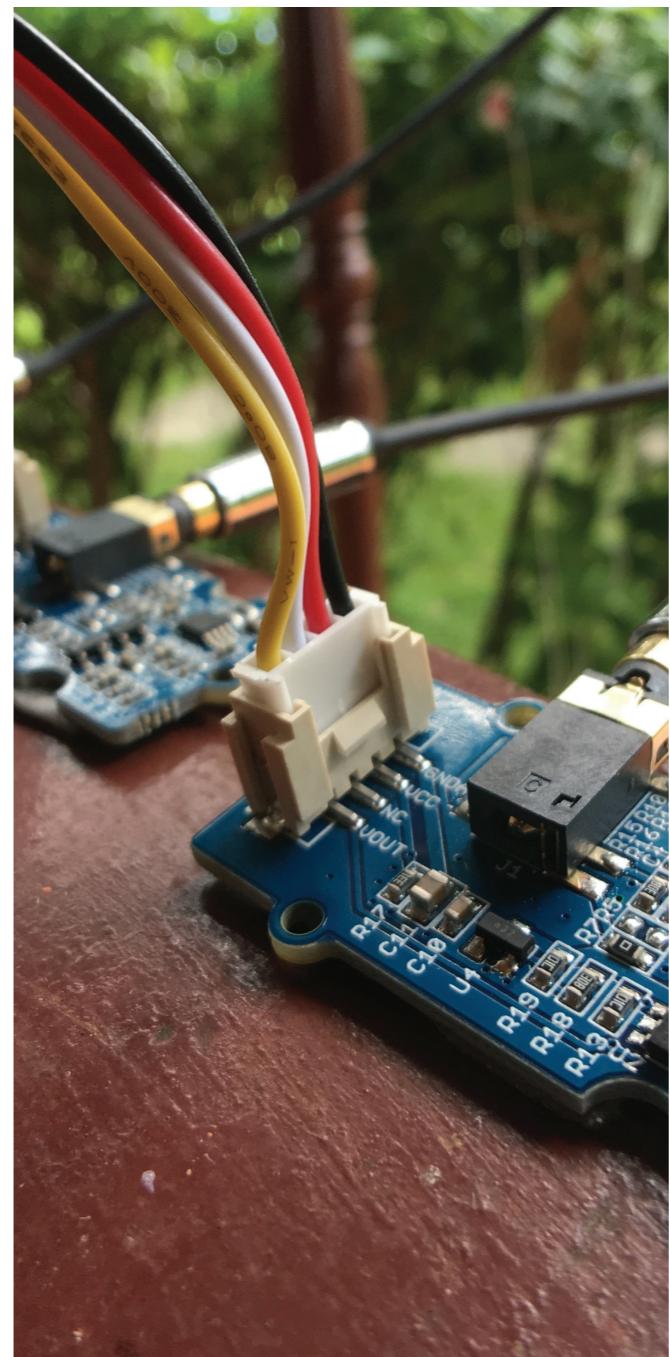
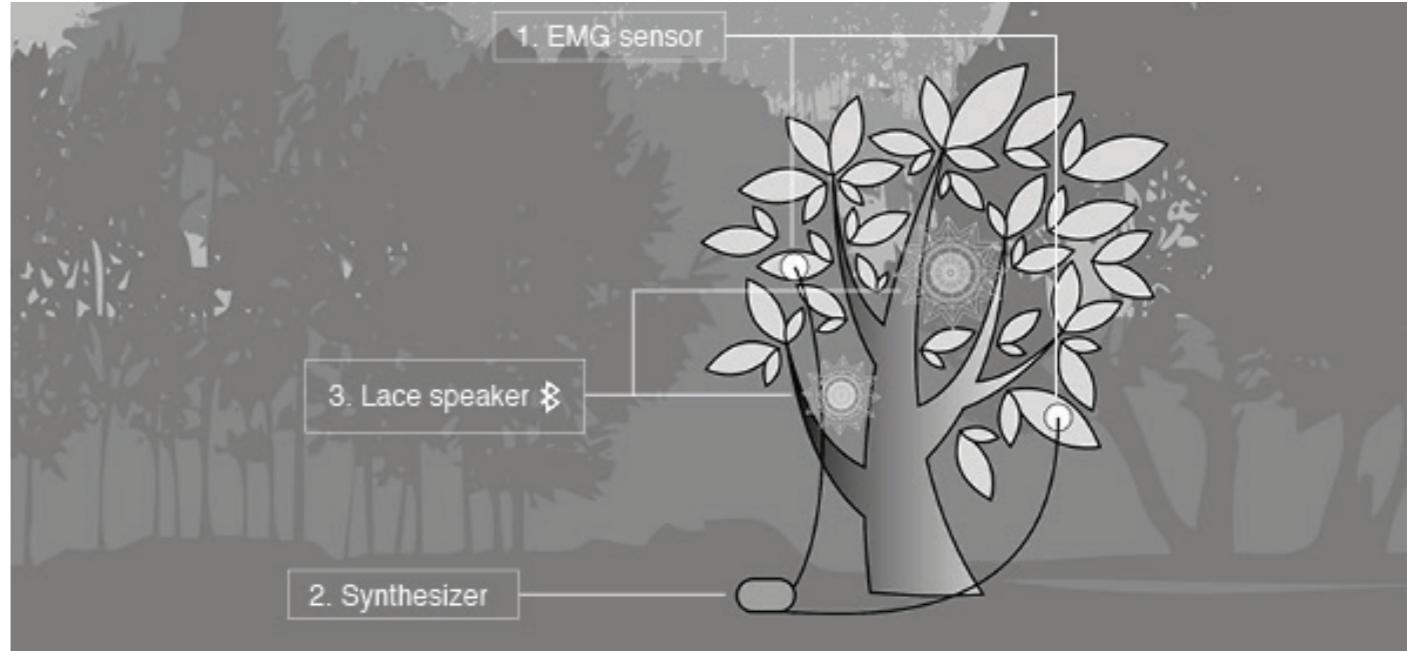
— And then am startled
again by the sight of
the sunrise.

SONIC LACE

Raune Frankjaer

Initiated at DinaCon 2018 at Lone Island, sonic lace combines textile speaker making with needlepoint Teneriffe lace and attaches to plants in the local environment. It uses bioelectric signals emitted by the host plant to generate sound.

Initial experiments were carried out on the strainer of a repurposed lemon press, later in the process I used a laser cut frame to weave the initial speaker part and commencing the lace-making. The lace is then finalised directly on the plant. The project is still developing.



ANTS FABRIC

Margaret Minsky



Anticipation was a great aspect of Dinacon. I had stated, and thought, that my main project would have a large component of wearability and perhaps eTextile construction. (For those who wonder, it didn't, although I sewed some wearable wrist holders for bb:c:microbits which I decided not to use.) The anticipated wearable aspect of my project was so open-ended that selecting and packing a stash of fabrics and sewing supplies to bring was fun. I also did not know how much of a textile corner/workspace would be set up (it was amazing, folks!) though I knew that I was arriving in the same week as several of my heroes in the wearables and E-Textiles communities.

While assembling fabrics and supplies, I had one of those lightning realizations that Dinacon would be a great forcing function for me to learn a paper-based fabric print repeat technique that I had been meaning to practice. I was inspired by this block print of an ant, created by my son Miles Steele a long time ago in 7th grade.

I used colored pencils and a favorite printer paper as art materials. After some web research on ant species in Thailand I reinterpreted my son's design concept to match three species, the Ghost Ant, the Carpenter Ant, and a leafcutter which I fortunately colored bright orange, so that I can now claim I knew about the famous Weaver ants of Koh Lon. I also decided that for Din-



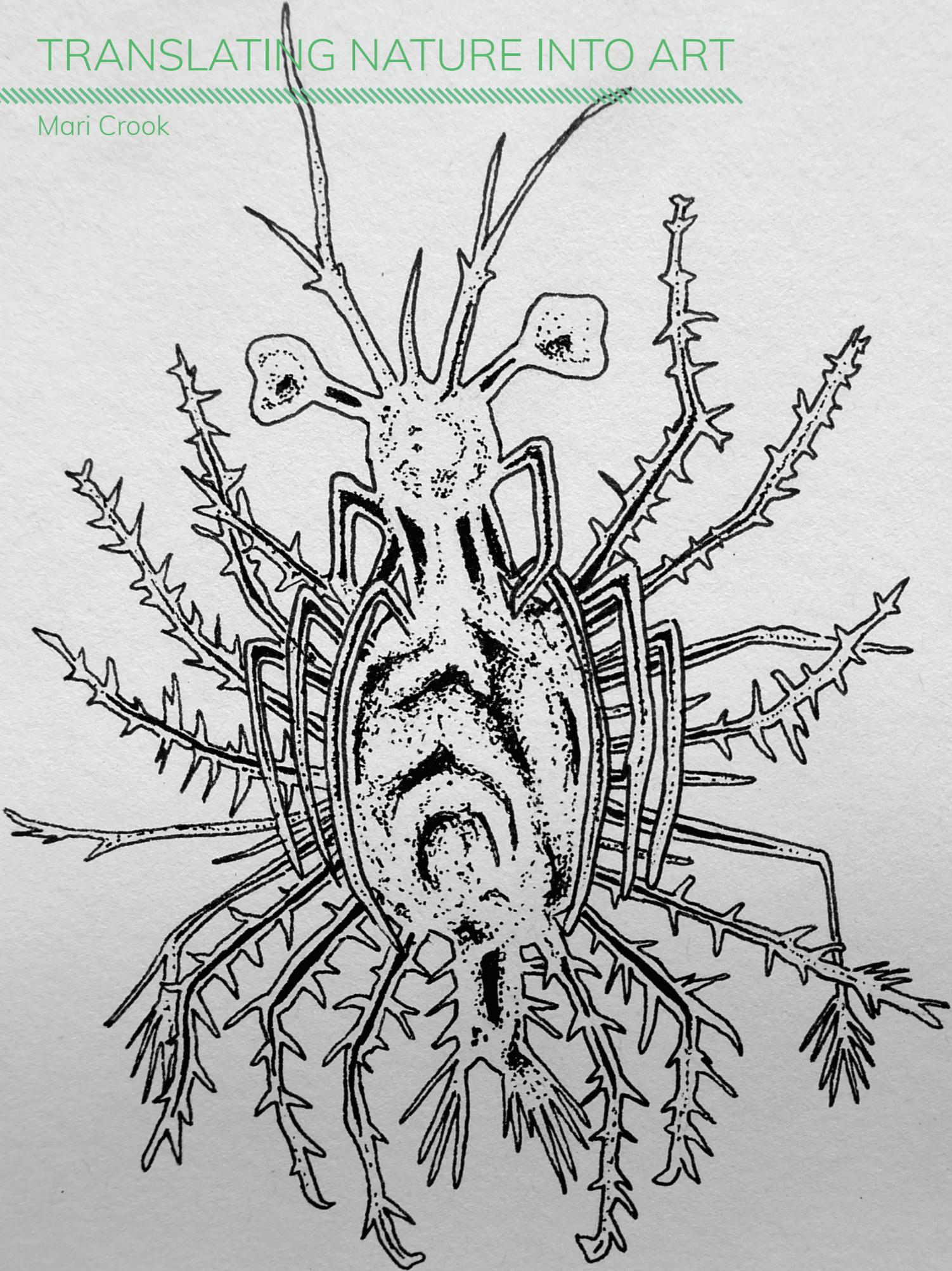
acon, the artistic interpretation of an ant needed a distinct gaster. The web research did not get me to the point of narrowing down to species that might be likely in Southern Thailand particularly; I figured I'd learn that when I arrived and the next design can incorporate local ants only.

The rashguard project became one of my two side projects, as well as a way to enjoy sewing and sharing sewing knowledge back and forth with others. It would have been great to finish the garment there...with no guarantee of time and facilities for that, I brought my regular rashguard for snorkeling. Good thing I did, because I copied it to make the pattern pieces on the pattern paper I brought. It was much more complicated than I had thought, it has nine pieces! At Dinacon I cut all the pieces, sewed about half the seams, and then packed it up to finish back home. The pattern paper, still pinned to the pieces had gone from crisp to the texture of a thin damp washing cloth, in the Koh Lon humidity, so it was very supple and easy to pack.

Thank you and admiration to the many folks who had already hauled supplies for the textiles station, and thank you for intriguing thinking about found and re-use textile crafts supplies as seen in projects from Tribenet, Pom, Dennis, Kitty, Plusea, Mika, and Dani.

TRANSLATING NATURE INTO ART

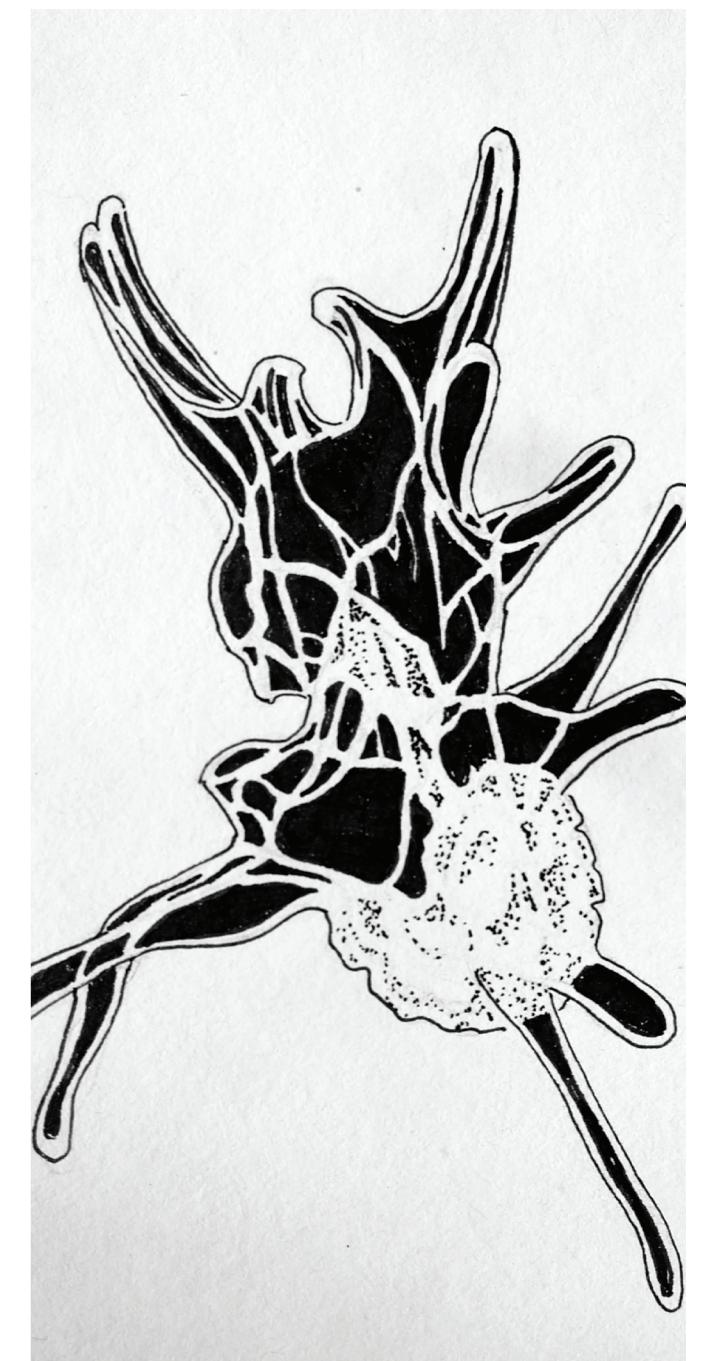
Mari Crook

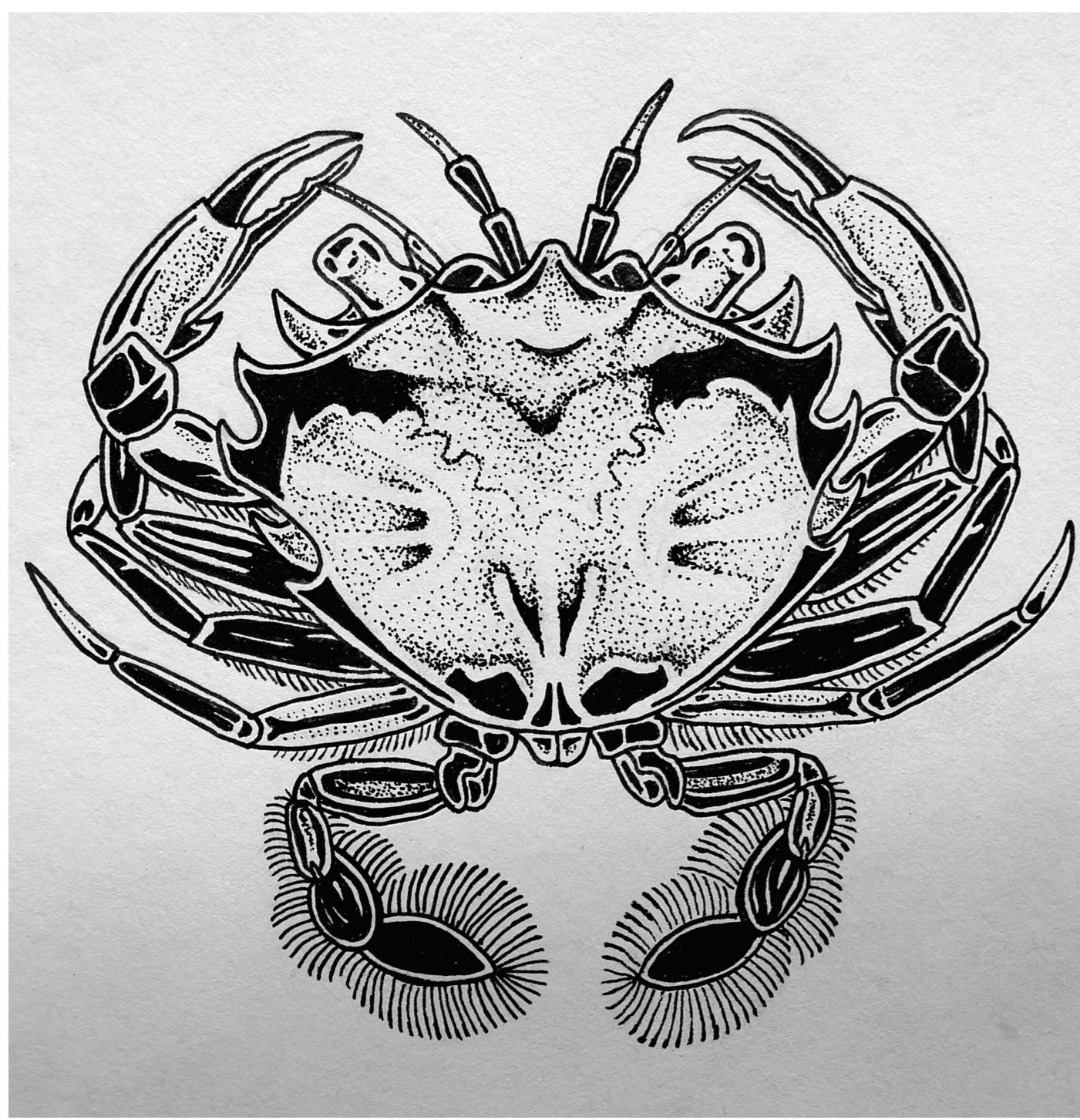


As an artist, I see myself less so as creator and more so as a translator. I take my direction from the biggest source of inspiration there is, nature, and try to turn what I see into images that can foster in others just a little bit awe for the natural world. Generally, I work at translating natural design into tattoo design. I am interested in how one can simplify the complexities of natural elements into simple lines, forms, and patterns.

Before I arrived at Dinacon, I was inspired by photos being posted on the Dinacon social media platforms. I saw photos of plankton collected on the Divamarine lab and I was moved to start translating translucent microscopic creatures into black and white 2-D designs— to make visible the invisible. Once on the island, it was the specimens I encountered there (sometimes literally at my door step) that I drew from. Since Dinacon, I have continued creating designs based on the local flora and fauna of Thailand that touch me with their beauty.

Here are some tattoo designs (plus one pen and ink sketch and one watercolor drawing) that were motivated by projects of other Dinacon participants as well as the unique outdoor experience of the convention.

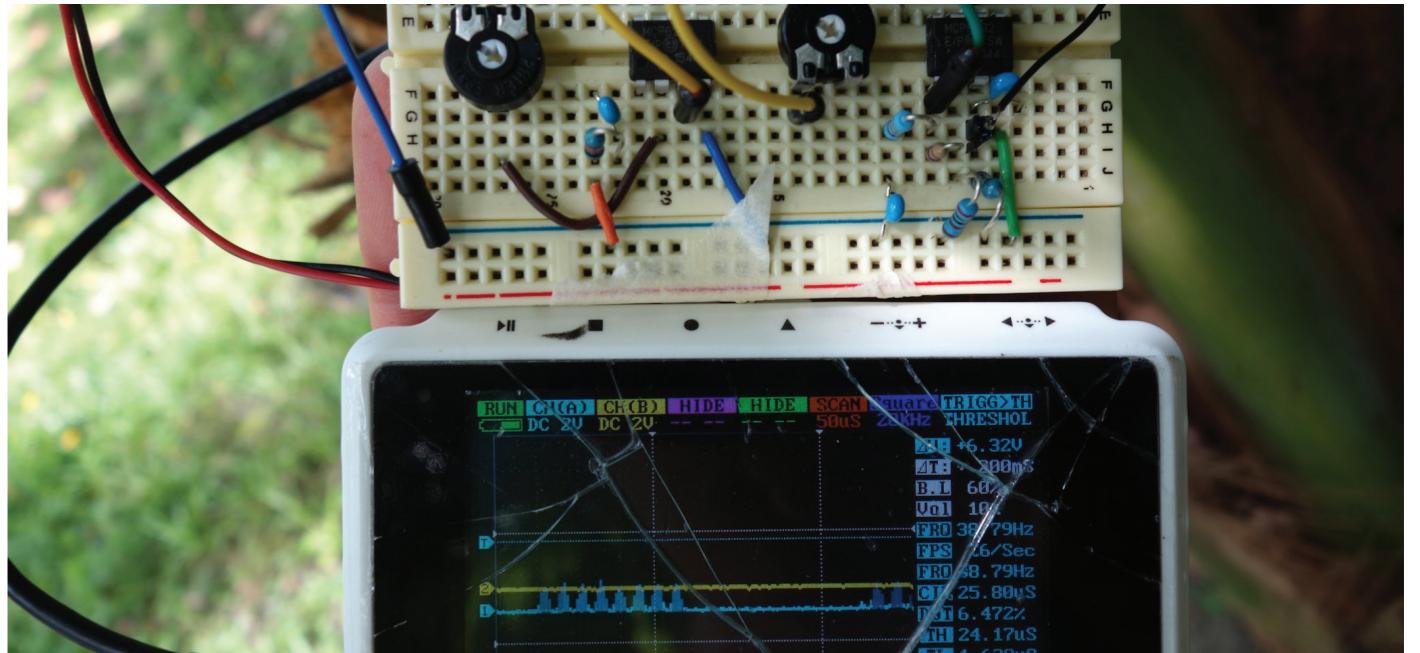




TREE AREA NETWORK (TAN)

A private Network for trees and humans
Ingo Randolph

A TAN is a Network using plant-infrastructure to transmit data over trees.



Introduction – Personal Area Network (PAN)

In his book “When things start to think” (Owl Books – 1999) Neil Gershenfeld writes about how they found a Private Area Network using the body as data-channel: When trying to find a “bug” measuring the hand-position of violinist Ani Kavafian he and Thomas Zimmerman found that human bodies can be used as a data channel using capacitive coupling.

“... the source of our problem was immediately clear: part of Ani’s body was in the [electric-] field and part was out; ... Tom [Zimmerman] then realized that we should be able to detect the part of the field that was passing through her body. This creates a tiny current. ... In other words, we could transmit data through a body. The bug could become quite a feature.”

There are Wide Area Networks (WANs) to link up cities, and Local Area Networks (LANs) to link up buildings. They have created a Personal Area Network (PAN) to connect parts of a body.

Thomas Guthrie Zimmerman wrote his master thesis (1995) with the title “Personal Area Networks (PAN): Near-Field Intra-Body Communication”: <http://www.cba.mit.edu/docs/the>





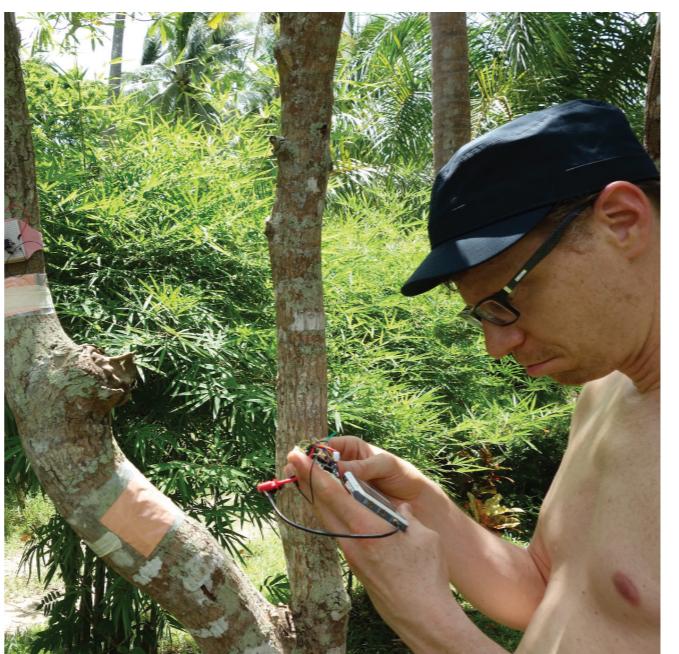
ses/95.09.zimmerman.pdf

Research in the last years was conducted to use electrostatic communication and waveguides (galvanic coupling) to transmit data through or from within a human body. This research mostly was done in the medical field for applications to monitor the body and send data from internal sensor-data to a base-station outside the body, where data then can be analyzed. This also is called the wet-net or internal-net. The focus in this research varies from the physical layer to the communication layer, an international standard (IEEE 802.15.6) was developed to standardize the way of communication.

Around 2005 Japanese company NTT developed a product named "RedTacton", but it is removed from their web-page and it is unclear what happened to it. When looking for consumer or prosumer devices in 2017 i could find none. The only way to experiment with humans as data-channel was to build a sender and receiver from scratch.

PAN @ Dinacon: TAN (Tree Area Network)

At dinacon i was interested in experimenting with this devices in the wild to send data over a tree, or in the best case to send data from one tree to another.



Is it possible to send data from one side of the jungle to the other? The jungle as a network. I wanted to tackle this questions by starting out using the device on a single tree to see if it is possible at all.

In theory it should be possible to use capacitive coupling on plants. Like a human biological conductor also a plant consists of an internal wet system and an isolating layer on its outside, the bark. The internal system (phloem) is used to transport nutrients and food to and from the roots and consists mainly of water. The phloem also acts as a communication system within the plant; see: "Electrical signals and their physiological significance in plants", Jörg Fromm & Silke Lautner – Plant, Cell and Environment (2007)

Experiments

The used devices are the same as in the human coupling experiments documented here:

<https://ingorandolf.info/building-a-near-field-intra-body-communication-device/>

The first experiments were to try if it is possible to detect a simple pattern. The pattern used was a carrier-wave of ~333kHz turned on and off in short pulses of ~200us. This is also the pre-



amble used to establish communication before sending data

Materials used:

- electrodes (sender and receiver): copper plated ripstop – woven textile – Statex, Shieldex® Nora
- sender / receiver: see link above
- amplifier op-amp: from MCP629x family

First experiment:

Setup:

- unmodified PAN sender and receiver on different trees and plants
- 3.4V input to resonant tank, resulting in ~30V peak-to-peak on the transmitter electrode.
- electrodes: sender: 45 x 52 mm, receiver:

Result:

It was possible to pick up the signal a couple of centimeters (~10 cm) away from the transmitter. Different plants worked different well.

On one plant it was only possible to receive the signal on a branch of the same sub-branch, but not on the upper-branch.

Using a steel-needle penetrating the bark as the transmitter electrode, improved transmission. The needles was in the bark for ~1.5 cm. While this showed better results we distanced



from such practice as we did not want-ed to violate the bark of the tree.

Second experiment:

Setup:

- modified transmitter to send with higher voltages (12 .. 24 V input, ~80 .. 180 V pp on output)
- modified receiver with a third amplification step (MCP6292)
- same electrode configuration as in the first experiment

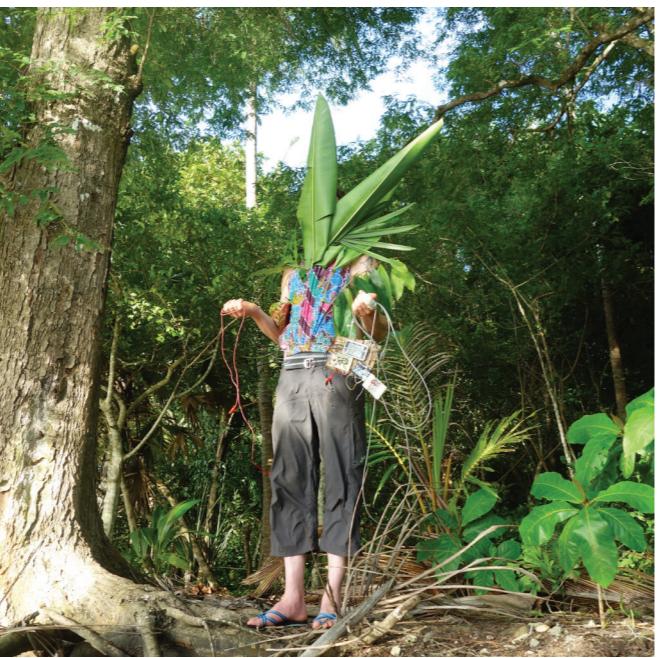
Results:

As expected the signal could be picked up better with the stronger signal and the more sensitive receiver. It was pos-sible to receive the signal from ~1m away from the sender on the same branch. The signal did not travel across branches.

Third experiment:

Setup:

- sender with higher voltage: approx. 17V input and ~100 V pp output
- using circular electrodes around the branches for transmitter and receiver electrode.

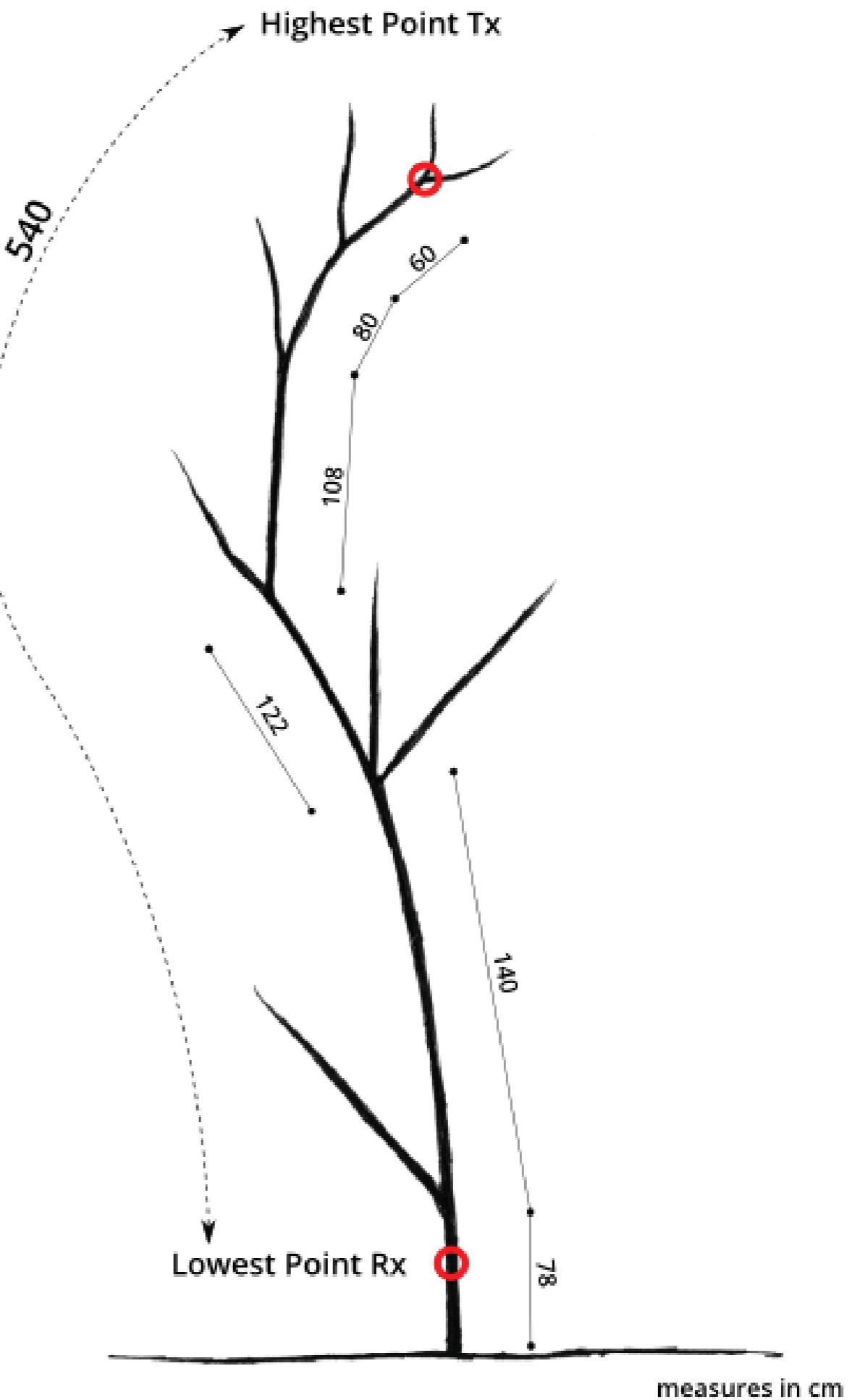


Result:

Using electrodes around the branched we could picked up the signal unex-pectedly well. It seems that encircling the branches with the electrodes per-turbs the phloem well enough to send the signal over branching from the top of a tree to it's stem close to the ground. Different input voltage ranging from 12 V .. 24 V with a resulting output voltage of ~80 to bigger than ~120V peak-to-peak on the sender resulted in different signals-strength picked up by the re-ceiver. All input-voltage configurations could be picked up.

With this setup it was possible to send sensor-data measured at the top of the tree to the stem close to ground. When the receiving electrode was too close to ground it was not possible to receive the signal anymore. (as deflected to ground?)

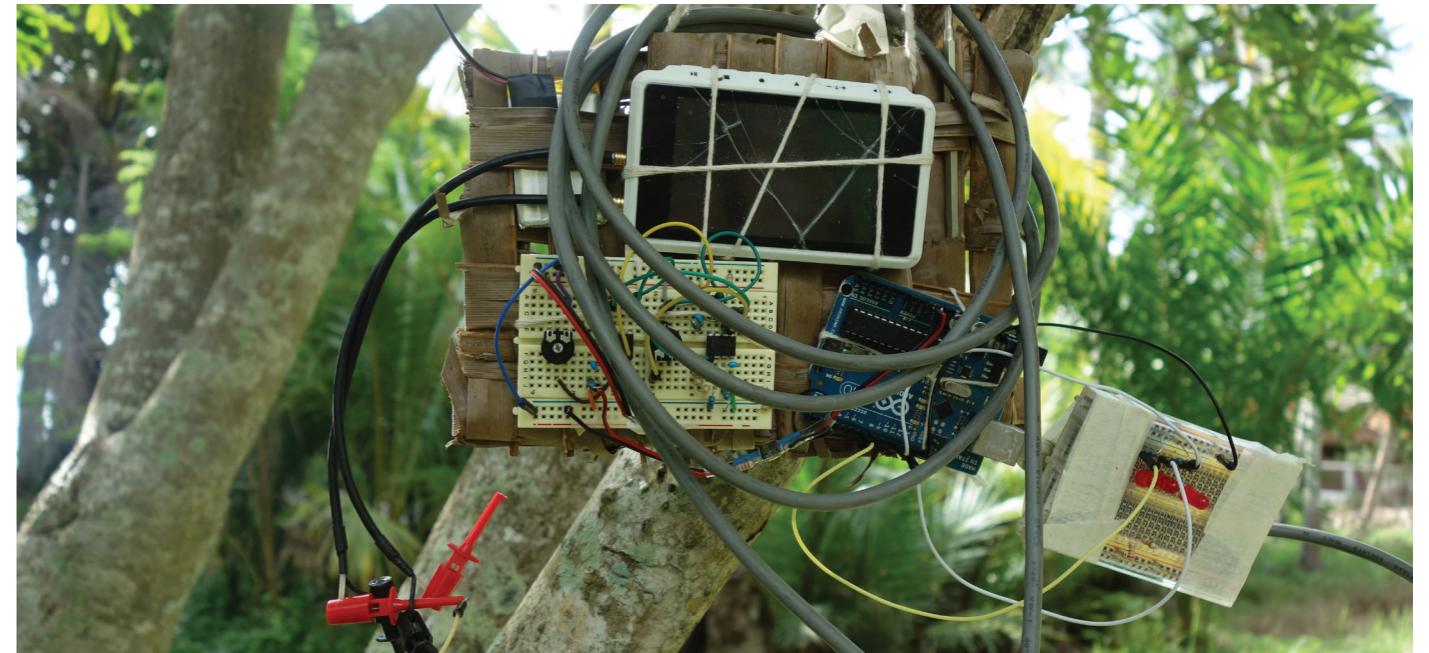
The signal passed 5 branchings and covered a distance of around 5,40 me-ters.



COSTUMING TAN

A private Network for trees and humans
Mika Satomi

Costuming TAN is a wearable antenna for Tree Area Network Project by Ingo Randolph. It is an attempt to also think about how we understand ourselves, nature and technology beside making a fancy probe for a technological instrument.



This is a Ritual for Tree Huggers.

Some say hugging trees gives them energy, or recharge their lost power, luck and wisdom. One may believe that one can communicate with trees when synchronizing with them.

In each households, a spirit lives.

One can find a small house like shaped statue somewhere in a household. This is made specially for spirits to reside. Residents place food in front of these houses so the spirits can eat. In return the spirits protect the house from thief and bad lucks. These spirits are not almighty. Sometimes they get into bad moods and make a little mischief or get lazy and result in harm to the house owners.

I felt like they are a bit like the cats in this island. They protect houses and inhabitants from the snakes, cockroaches and rats. They eat random food we give. Sometimes they are not in a mood and puke on our backpacks and pee on our laptop power chargers.

Do Thai people really believe in the spirits?

During my stay in Koh Lon, I was reading a book by Robert Pfaller called "On





the Pleasure Principle in Culture". In this book, he introduces the concept of Croyance (believe/superstition) and Foi (Faith) from Octave Mannoni. Pfaller points out that our "civilized" culture is a culture of Faith. We draw self-esteem from the illusion. In Mannoni's theory, Mechanism of Croyance operates within the illusion of others. For example, "I know wearing a mask will not let the spirit possess me, but our ancestors believed in it. So I wear the mask and act as if I am possessed" He points out that the owner of the illusion (who believes in it) is often at somewhere else in the case of Croyance. Another example: when we talk about bad luck happened to your friend, and say "oh, I am lucky that I am fine" and you would knock a wood to prevent the very bad luck does not happen to you. In this case, you are very much aware that "knocking wood" does no relation to keep you healthy. Nonetheless, if you did not knock a wood and something bad happens to you, you will feel bad. So "just in case" you would knock a wood as a believer. This is what Pfaller calls as "illusion of the others".

The project is a reflection of my thought around this topic. When we have faith in religion, political system, or science, it is us who believe in it. We become the subject of the illusion.



There are no distance between the illusion and ourselves.

The costume for TAN is for Tree Huggers (or any of us who feels a faith in Nature) to step back and see their belief as an illusion of someone else, to give a space to observe their faith in Nature and/or Science from outside perspective.

The costume is made with Batic Fabric. Batic is a technique to dye fabric with wax resist that is widely practiced in the South East Asia (and many other region in the world) in traditional clothing. I have purchased this fabric in Phuket stating "made in Malaysia", so technically it is not a local fabric, but you can observe a lot of locals wear them as sarung. The costume consists of a lot of long pockets to hold plant's stems like flower bases.

I have added crochet behind the collar so one can tie lace to fasten the garment. Shoulder pad is curved like the traditional Thai Opera costumes.

The inner side of the collar is embroidered with conductive thread creating an electrical connection to the wearer's skin. The end of the embroidery is made into small crochet loop on the outer side of the collar that connects



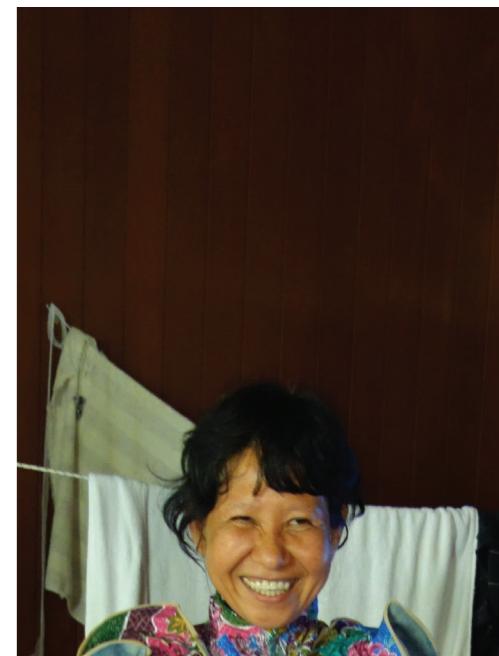
with a crocodile clip cable to the measurement tool.

Monica was nice to be a model to test how it looks on a person. The costume is designed to fit various body size person.

The final experiment is documented with Ingo wearing the costume and acting as a probe/antenna for the Tree Area Network. We could reliably receive data from the environmental sensor (humidity/ temperature) placed on the tree 3m above us.

But why one should make such a big effort to create a costume and wear a complicated plant garment to become a simple probe for an instrument? Rituals existed in many cultures, and western or modernized country is not an exception. We just have forgotten about it. We instead practice faith (Foi) and have very little tolerance with people who do not share the same faith. Costuming this otherwise very technical device is an attempt to take ourselves "un-serious".

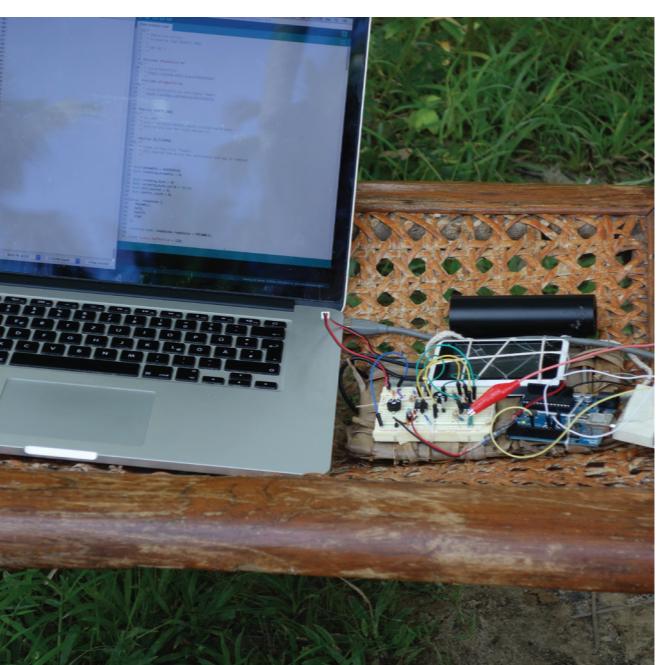
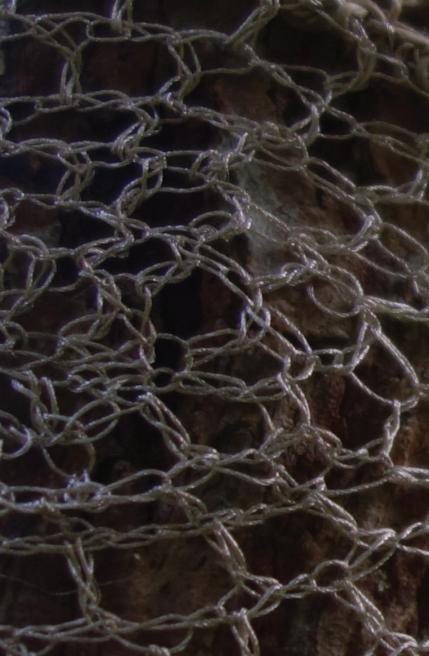
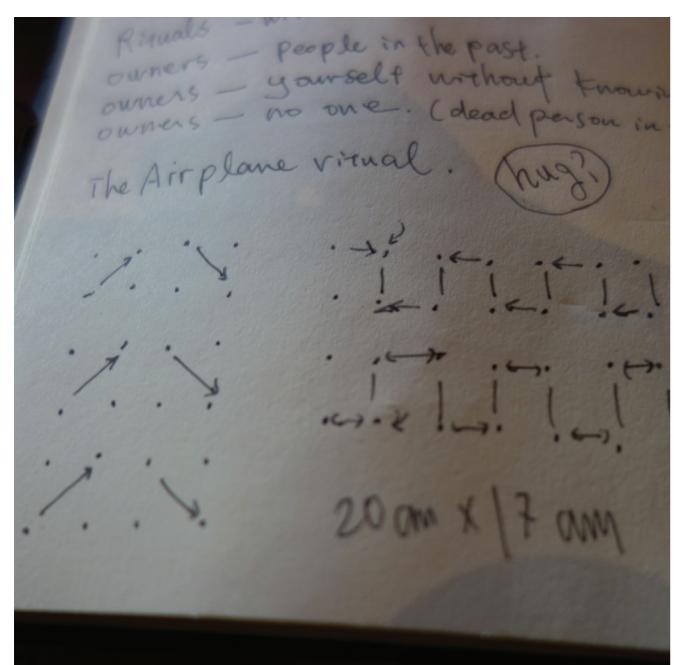
Originally I planned to make fabric antennas to replace the current PAN/TAN antenna. I started with experimenting with smocking, which is an old textile technique. I have started with pattern



experiment and then added conductive thread on the base fabric. But the result was not very interesting.

Another attempt was to make a crochet antenna with a combination of silver coated copper thread and linen thread. At the end we did not use this antenna for TAN experiment due to time constrain, but it has a nice aesthetic potential.

After the documentation of the project, the costume became a dress for Pom. At the end this fabric and the design suits her the best!



THAT STRANGE SENSATION

Dezmediah

My main project at Dinacon was to write a short story inspired by one or more things I saw there. What came out was a story about a marine biologist who finds herself on a tropical island (Dinosaurs will guess it's Koh Lon) in an unspecified future (Dinosaurs will guess it's 2561) with a bunch of other scientists and artists. Nobody knows why they're there and so, in addition to surviving, etc., they're going to try to figure that out. At Dinacon I wrote about 4,000 words and I realized that I wasn't nearly finished yet. So, since the thing had a sort of pulpy, classic science-fiction feel to it, I thought I'd serialize it.

Following is Part One. New parts get released on the first of every month and can be read at thatstrangesensation.com. The project will (hopefully) continue until late spring.

Part One

Lately, every time L ascended, she felt on the verge of passing out. About two meters from the surface, she'd find herself needing to grasp onto the inflater nozzle of her BCD in order to remind her body of the task at hand. The water would squeeze her, the churning, womb-like sounds surrounding her and disorienting her. The sun, filtered by the water into individual rays, would hit her like a spotlight, causing her to shield her eyes even as she felt herself hungrily drawing toward it.

And now, once again, she finds herself on the surface, back in her right mind, back on solid ground, which is in fact the choppy surface of the water. The sun steady, the physics standard. Escaped. Just a weird sensation was all.

Ever since she was a beginner diver, she'd felt a whiff of this sensation, but in the past few weeks it's become stronger every dive. Glancing around to check that the interns she's been diving with are well, she actually wonders—if she were to let herself go on autopilot during ascension, allow her mind wander even just a bit, would she make it? Or would she pass out, sink to the bottom, die immediately?

What an unscientific thought. Likely she was becoming dizzy as a result of a slight physiological malfunction. An inner ear issue. Or maybe it was simply that this feeling mimicked that of not wanting to wake up from a good dream—it was so peaceful under there after all, so cozy, meditative. Your mind couldn't be scattered. The water directed your focus, plied your attention toward what it wanted to show you.

"My god, I know how you feel," her colleague, E, tells her as they unsuit back on the boat. E grunts as her tank clinks into its holder. "Sometimes I just don't want to leave that world."

"Maybe that's all it is," L replies, but still

she can't explain why the sensation is getting stronger, or—could she say—worse?

**

Two hours later she is entering the day's data into the Thai governmental database. On that morning's dive, she and her team of interns completed a fish survey and noted this bounty: forty-five butterfly fish, nine bream, five parrot fish, three angel fish, twenty-five wrasse, forty-five cardinal fish, and one soap fish. Still much fewer snapper than she'd like to be seeing, but the other fishes were doing well.

E types away beside her, probably messaging with a prospective intern: an eager undergraduate or beleaguered graduate student, looking for a suitable research site to host them as well as an exciting Southeast Asian experience. A storm has rolled in. L's nostrils are alerted to a metallic smell as large raindrops begin to fire away on the roof like they mean to put a hole in it. She feels as if the space has become smaller, as if the world would be happy to do them in. L leans her forehead on her hand, rubs her temples. "I've got a bit of a headache now," she says. E turns toward her and frowns.

"Take a paracetemol," E says and, sighing, turns back to her computer. Then she groans. "This student wants to bring his girlfriend. But she's not going to do any research. She just wants to hang out. 'She won't take up another bed,' he says. 'I don't see why she has to pay.'" She rolls her eyes. L gets up and heads to the kitchen to get a drink of water. On her fourth step, a curtain comes over her vision and all she can see is black. "I'm going blind," she says as she collapses to the floor.

When she wakes up, E is standing over her. Her face looks old, and the geometry of it evokes an ancient math. L is sure, then, that there have been hundreds of people throughout human history that looked exactly like E.



And then she feels her heart beating faster than it should be beating. Her breath is deep and rapid at the same time, as if she can't get enough air. But her breath moves in and out, her heart beats, and she can see.

"I'm okay," she says.

"My god, what is wrong with you?" E yells, her Russian accent really coming out now. "Do you want me to call an ambulance?"

"No, no," L says. "I just stood up too fast I think. Something a little off with my circulation lately, maybe my blood pressure."

Maybe I'm fucking pregnant. Fucking pregnant, that's a funny phrase.

"My god, go home," E says. "Take the day off."

"But new students are coming, I have to orient them."

"Honey, you need to take some time off."

**
A couple hours later L is in her house, in her bed, inside the mosquito net. Her headache has faded and she feels fine. The storm has passed away, leaving behind thin, shifting, planes of air. She's reading a dense, poetic book about water and how to interpret it. She's enjoying the language, but can't process much meaning from it. She puts the book down and looks at her nightstand. Two pregnancy tests rest there, staring up at her with two blank eyes. No results.

How is this possible?

Pregnancy was unlikely, as she and her various partners on the island always used condoms, but you never knew. So she could understand a positive result and she could understand a negative

result but a non-result was perplexing to say the least. Just a little low on iron from my last period. Something, something like that. It is barely five o'clock. A breeze blows in and a rodent scampers across her roof. The cicadas are quieting down to a low, tired, scratching, only needing to cool themselves down a little in this breezy landscape.

"We will look at water as the subject. Mammals and insects are interesting, but they will only earn their place in this book to the extent that they can explain the behavior, the signs and symbols of water."

She puts the book down and falls asleep. She sleeps 12 hours. At 5 am a gecko lands on the wall of her bungalow just outside her head and calls out, loud and clear, "uhh uhh, uhh uhh, uhh uhh," and she jolts awake, thinking the gecko is in her bed, that someone put it in her bed to wake her up, but there's no one in her house, not even a gecko.

She can't believe she slept 12 hours. Maybe I am fucking pregnant.

Suddenly she feels tough and lichenous, tucked away inside herself from whatever might be happening outside.
**

On her motorbike drive to work, a rabid dog lunges at her, causing her to swerve sharply. After driving off a safe distance, she stops and looks back at it. It lies in the middle of the road, sunning.

She gets to the lab before E and spends a quiet morning drinking coffee and looking over the data. The coral bleaching is getting worse and what to do, what to do about that. 50% bleached already and it's only the beginning of the hot season. At some point in her meager little life, she'd decided that the best thing she could do was have this field station and report the data. Tell the authorities. Alert people in power. Bolster the science, strengthen the

argument. Not shut up. Perhaps she should do more.

E enters the room with a clanging of bags and various attachments. Her motorbike helmet falls off her arm and rolls toward L. E's eyes go wide and she feigns anger. "My god, what are you doing here?"

"What do you mean?" L says.

"I thought you'd take the day off."

"Oh I'm fine. Got a good night's sleep."

E tutts and shakes her head reprovingly.
**

Two hours later they're diving again. It's been determined L will be divemaster for two of the more experienced students and E will take the newbies. That way, the experienced students can cover some of the more routine data gathering and L can be free to focus on her pet research project, which tests whether smaller solitary corals are less resistant to bleaching than larger solitary corals.

E's group lays out the transects while L and her interns hang back and look at coral. She breathes out and sinks closer in to some branching coral, the home of twenty or so baby, white and yellow butterfly fish, who dart in and out like bees. She wishes she were doing a fish survey so that these lovely, tiny fish could be counted. If only their presence could be felt, could matter in the world. But probably they don't care either way, probably that doesn't matter to them.

Now it's time to go and she motions the students to go ahead of her. With the lab's underwater camera they take a picture of the transect measuring tape every 50 cm. Back at the lab they will need to go through every one of these 300 pictures and identify the coral just to the left of the transect. She removes her underwater slate from her BCD pocket and begins counting. Every-

thing is slow, deliberate, meditative. She breathes slowly. It's arduous counting all the solitary corals—there are so many. The students' frog kicks are too frequent, they are going too fast—almost out of her sight now. No matter, they are safe and experienced. She finishes her survey and meets them at the end of the third transect at 50 minutes into their dive. Together they reel up the transects, spiders assuming the thread of their web back into their abdomens. She directs one of the students to take the transect bag and hook it to her kit. The three of them look at each other in the eyes and L makes the hand signal for "let's ascend"—a thumbs up.

She doesn't think about that strange sensation. She's thinking about the data she gathered and about what conclusions she might begin to draw. Slowly, slowly, she swims up, not even needing to think about moving her feet, just willing herself up. And then, at three meters from the surface, once again, it hits.
**

The pressure is more intense this time, the movements of the water like a thousand little flies distracting her attention. The light hits and she feels the heat of the sunrays on her body. The rays form a cone, which twists around her, and she is an unwilling dancer, moving her limbs oddly, floating six inches above an empty stage.

And then she is elsewhere. Her face is naked—no regulator. She feels sand in her nose and on her lips. She sputters, rubs her nose with her index and thumb, sticks out her tongue. Opens her eyes. She's on the beach. Or a beach, rather. She doesn't recognize the topography of this beach, with its thick forest, its meters of white sand. All the beaches on her island are short, with sparse, low vegetation and pieces of trash strewn about. This beach is pristine. A breeze tumbles down the white sand, unobstructed by a single other person. She is alone.

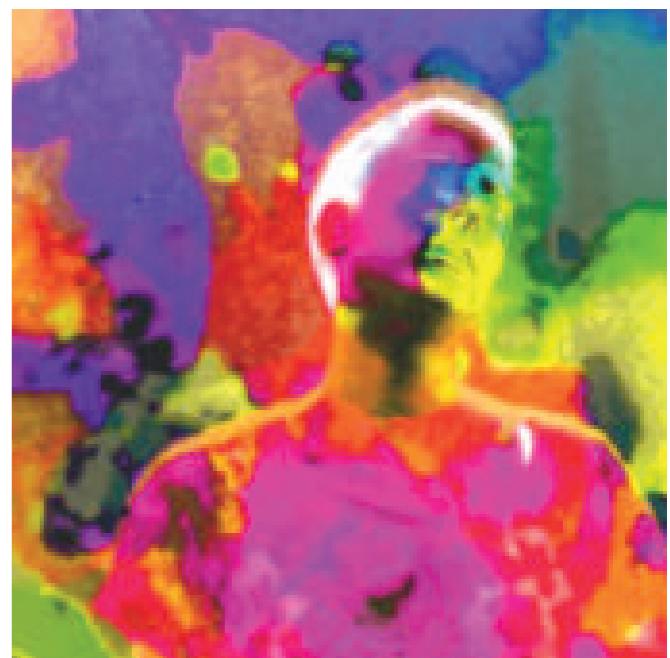
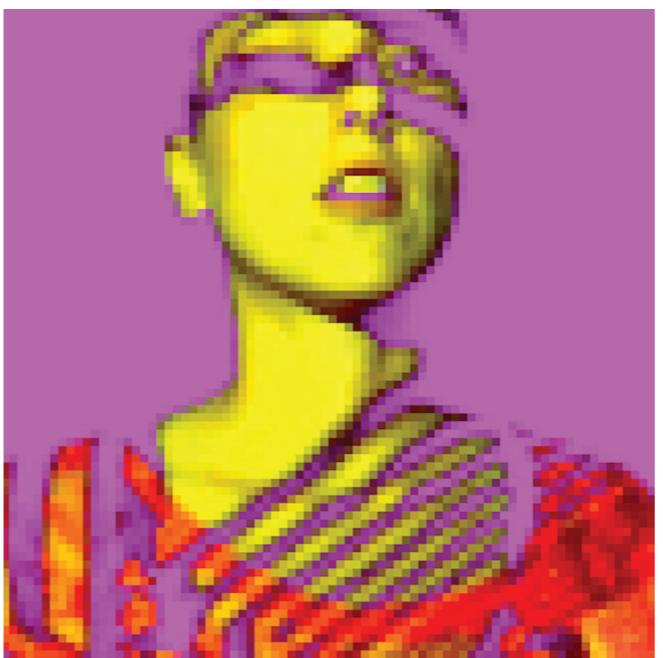


ROBOT LANGUAGE MUSIC VIDEO

Albert and Mary (Dezmediah)
with help from Maggie Kane, Tasneem Khan, Mark Li-
fana, and Andy Quitmeyer

Make a kickass music video, with only the tools at hand; this was the challenge Mary and Albert set for themselves while on Koh Lon at Dinacon.

Spouses Mary and Albert came to Dinacon as their last stop on a seven-month long traveling stint, mostly in Southeast Asia. They knew they wanted to make something great at Dinacon, but also knew they wouldn't be able to bring many supplies, as they'd have to carry it on their backs for months.



Mary is a musician, and while the thought of being apart from a guitar or piano for seven months made her jittery, she also relished the idea of being forced to learn the ins and outs of the iPad GarageBand app. So, she got her fingers used to the tiny keys of the on-screen keyboards, spent hours combining the built-in samples, and recorded vocals in bathrooms, on quiet beaches, and in backyards and forests in Croatia, Cambodia, Thailand, Malaysia, Indonesia, and Singapore. In May, she finished her EP, entitled Beep Boop. Pretty soon she and Albert realized that Robot Language, the first track on the album, could make a pretty fun music video.

Albert has a filmmaking background, having graduated from NYU Film School in 2005. In addition to filmmaking, Albert is a visual artist and had recently begun exploring making video art using one of the portable, affordable, pico projectors that have come on the market in the last few years. It was in Croatia that Albert first showed Mary his technique. He created a feedback loop between the projector and the camera, which resulted in interesting color distortions and multiplication and tilting of image elements. What was captured on the camera was fed into the projector, which projected onto a surface, which the camera filmed,

which was fed into the projector, etc. The result was a fun, trippy "reality distortion" beam, which Mary thought would be perfect for a music video.

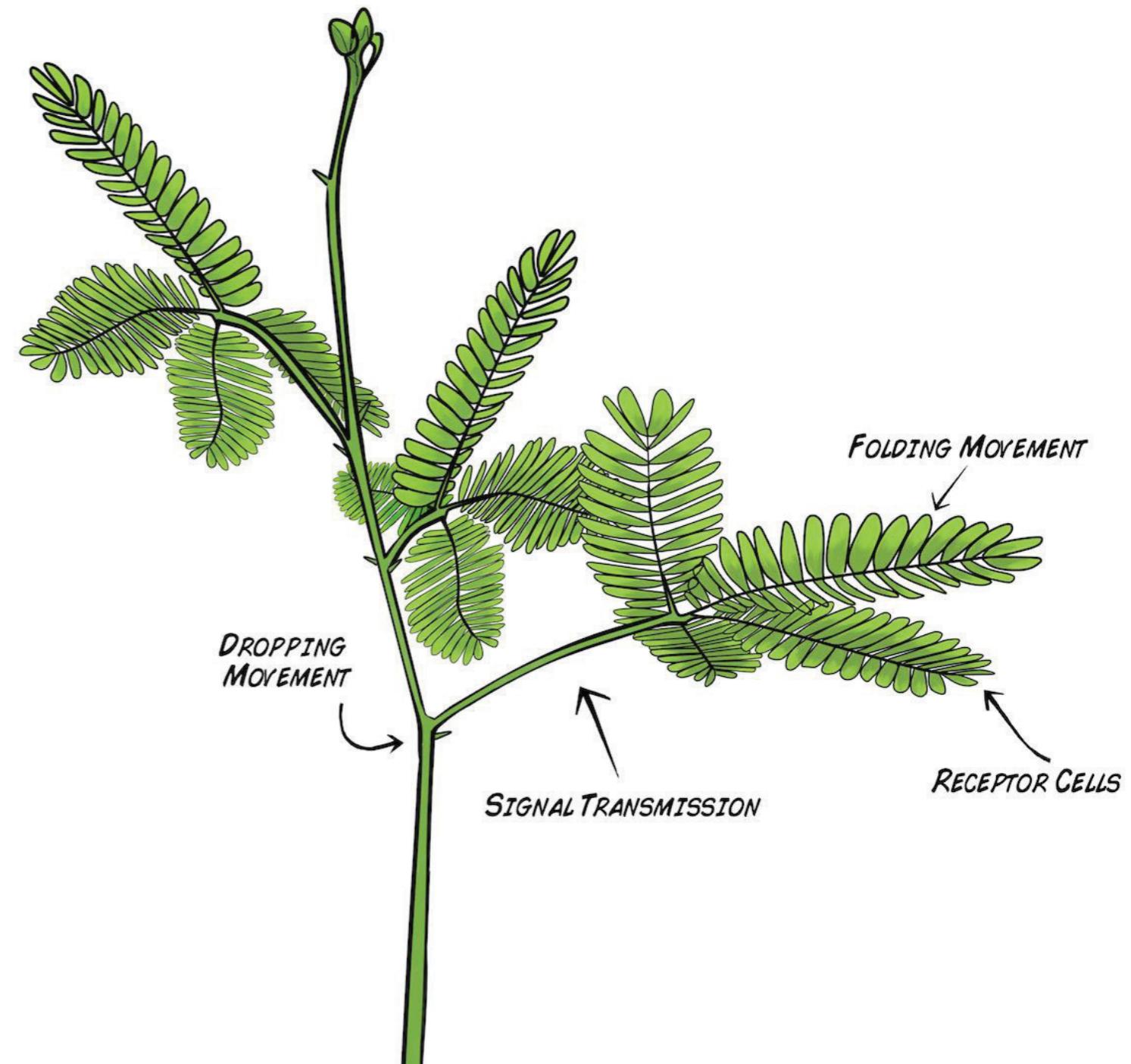
They knew what the story of the video would be, and had an idea of how they would film it. Once they got to Dinacon, the challenge was how to make a robot costume using only the tools at hand. Thankfully, they met Maggie Kane (Streetcat), a genius inventor, hacker, and cosplay costume designer. Maggie worked with Mary for several days to make the costume from primarily trash and duct tape.

Albert and Mary also enlisted the help of Mark, a great videographer who could film the scenes where Albert would need to be in costume as the robot. Andy and Tas, being the amazing people they are, offered to stick around for the filming, and brought down to the beach an assortment of bright lights, which they kindly held during filmmaking. They also gave valuable input on shots and angles.

The result is "Robot Language," the music video. The video can be watched at <https://tinyurl.com/dezmediarobot-language>

SMART ENVIRONMENTS

Smart environments: from natural to digital
Deren Guler



In the future, we will live in “smart environments”. A smart environment is filled with smart objects, objects that can presumably react or show some sign of thinking. I have always been frustrated by this classification or trend, as it is redefining the word smart. Does it also imply that some objects are stupid? Have we previously lived in a stupid environment? Etc... I am currently developing a learning platform for Internet of Things at my company Teknikio, so I should add that these concepts are extremely top of mind.

My original proposal for Dinacon was to create an environment in which the

plants and trees could communicate with each other. Upon arriving to the island, I decided to see what else might inspire me in this strange paradise.

I didn't rule out the idea of a networked project though, and had brought several different bluetooth development boards just in case.

It started with the Mimosa plant. I had never seen one before and I was instantly fascinated by the way these plants that automatically closes its leaves. How does it decide when to close its leaves? Furthermore, is this a



smart plant, or an emotional plant, or a robot plant? I decided the former—this plant is smarter than other plants that can't control their leaves and just sit there like nothing happened when touched. What intrigued me most was that it felt like communication. And so, I started to look for other elements of non-human natural behavior in this environment that felt like communication. I started by exploring how to express this system of harnessing naturally smart things for our own digitally built "smart" environment. I decided to build a prototype of a natural to digital communication system in which a sensor would collect data from the mimosa or other "naturally smart thing". This data would be transmitted via bluetooth to a human-made device that activates in response to incoming communication signals. Somewhat like this diagram:

I found some neat rip-stop in the scrap



Tetraponera ant - Photo by Magdalena Sorger

Insect - by Mari Crook



WILD BEHAVIOR

Jonathan Gill

My project was to develop a low-cost, open-source platform for testing the perceptual and cognitive abilities of animals in the wild. As a behavioral and computational neuroscientist, I design experiments and novel technologies to uncover and decode how perceptions guide actions in humans and animals. At Dinacon, I began to create a platform capable of precise stimulus delivery (e.g. sounds and lights in a multimodal game for treats), identification of animal participants (a sound/photo fingerprint), and wireless networking for the collection and sharing of data. The goal of this project is to unite DIY engineering with laboratory neuroscience/psychology to enable an open platform for “field neuroscience”.

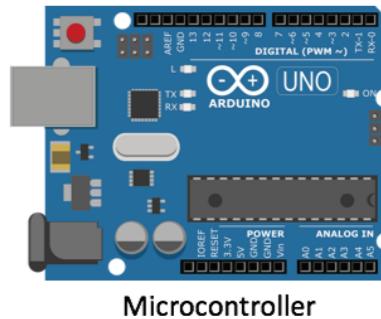
With these goals in mind, Wild Behavior was born!



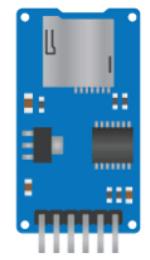
Stimuli and Response measurement



Speakers Beam Break LEDs



Microcontroller

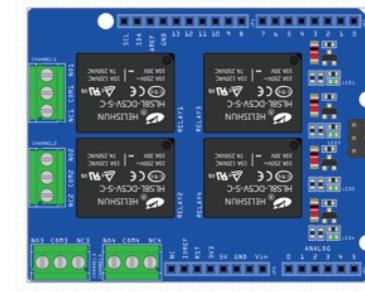


SD Card Logger

Reward Delivery



Syringe Tubing Mini-Pumps

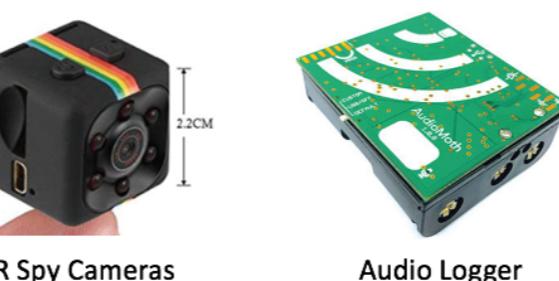


Relay Shield



Touch Sensor

Animal Tracking



IR Spy Cameras Audio Logger



Animal Identification

The general idea can be thought of as a “rodent arcade game”, where animals can approach a machine and get treats, or time running on a wheel, in exchange for participating in a simple game. The key is that their choices in the game can tell us about how well each animal can distinguish different sound frequencies (like a hearing test), or how well they can remember the order of different lights and sounds (like a memory game).

To do this I assembled a device combining some inexpensive off-the-shelf components, in the table below, that could be battery powered to be used outside on the island.

Island rodents respond to the stimuli by either sticking their nose across a beam-break, or by licking a tube which

would dispense tasty liquid if they made the right choice. To start with, the device plays the game “only respond when I play a certain sound or flash a certain light” (programmed using an Arduino), then progresses into more complicated games if the animal is doing well.

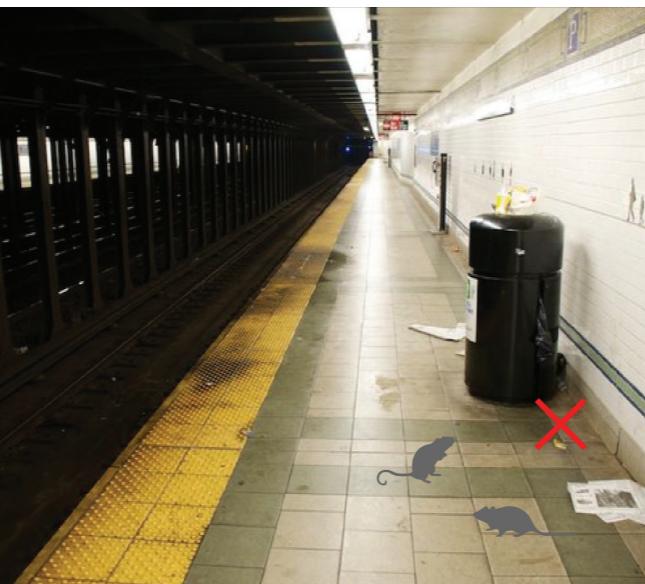
I was also curious as to whether wild animals might be interested in running on a pet-store running wheel as a reward, i.e. would they even find domesticated toys fun? I spent some time trying to follow up on this fascinating paper which demonstrated that wild mice, frogs and other animals would spend time on a running wheel placed outside “for fun”, even though they could run anywhere they liked. I tried to capture some island creatures in the act at night using IR camera traps and a



wheel baited with peanut butter.

By the end of my all-too-short stay, I had a prototype!

Now, after returning home to a land of millions of rodents, I'm planning to position new prototypes around the city. Who do you think are smarter, subway rats or park rats?



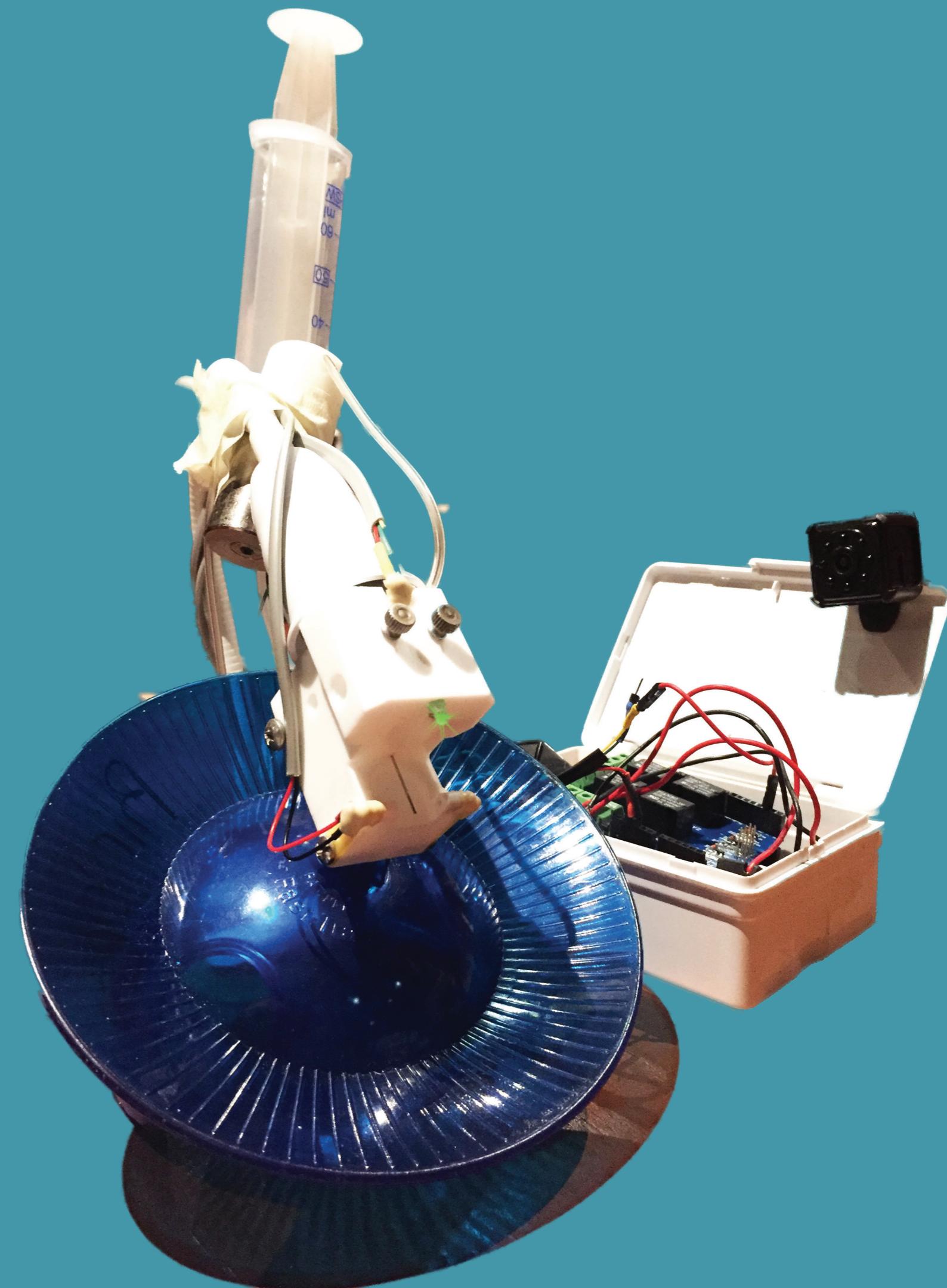
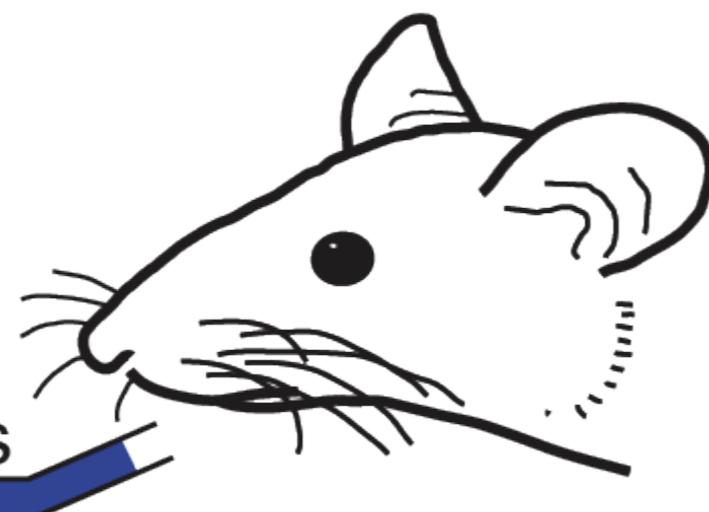
sound cues



light cues



tasty rewards

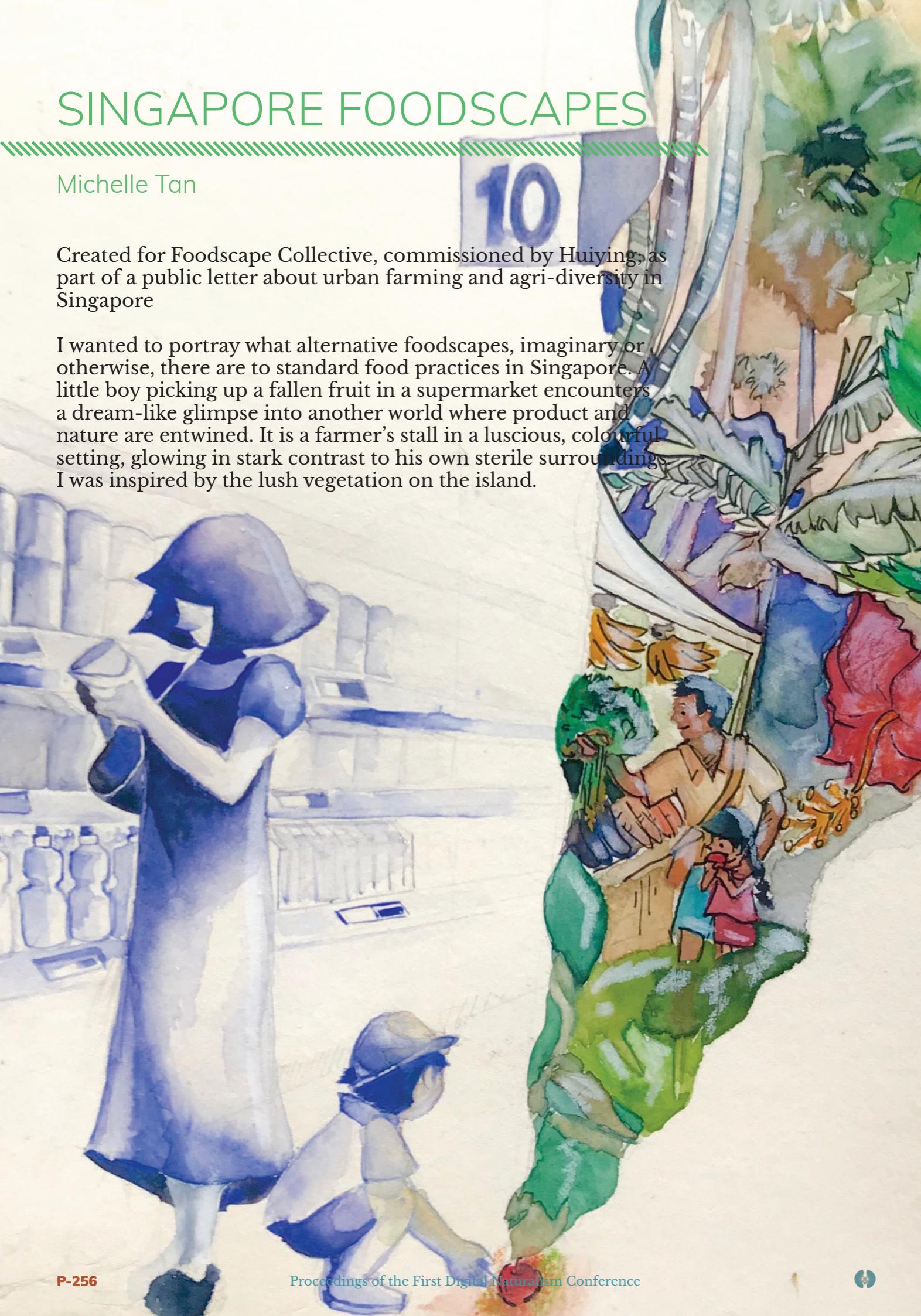


SINGAPORE FOODSCAPES

Michelle Tan

Created for Foodscape Collective, commissioned by Huiying, as part of a public letter about urban farming and agri-diversity in Singapore

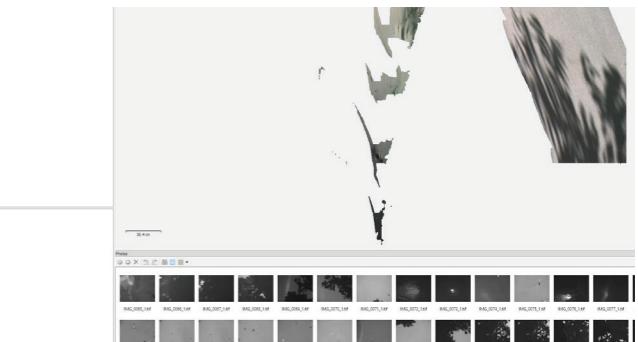
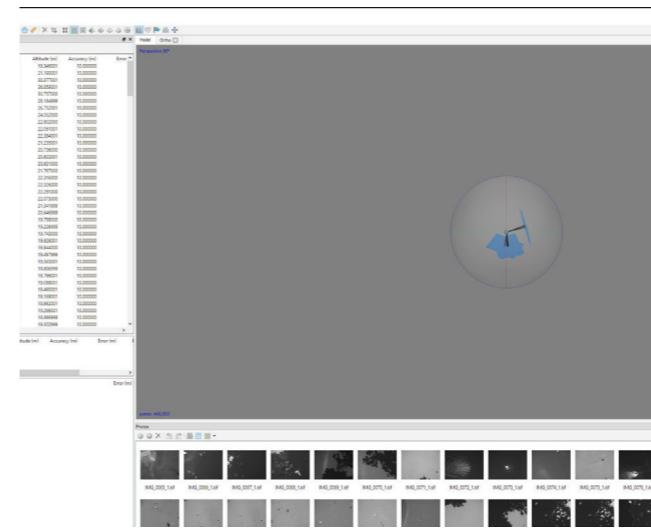
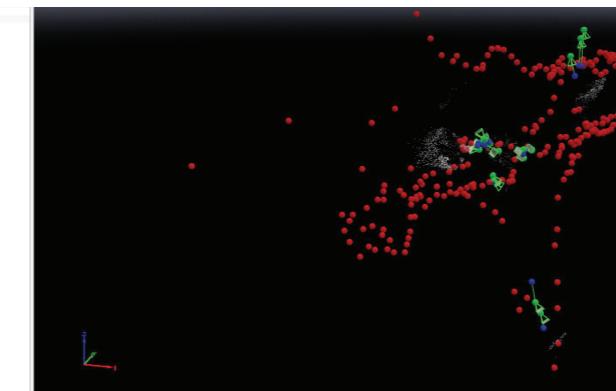
I wanted to portray what alternative foodscapes, imaginary or otherwise, there are to standard food practices in Singapore. A little boy picking up a fallen fruit in a supermarket encounters a dream-like glimpse into another world where product and nature are entwined. It is a farmer's stall in a luscious, colourful setting, glowing in stark contrast to his own sterile surroundings. I was inspired by the lush vegetation on the island.



MULTI SPECTRAL IMAGE TESTS

Marko Pelhan

Marko Pelhan used his time at dinacon to test out multi spectral photography techniques of different environments. He is still processing the raw data from these files.



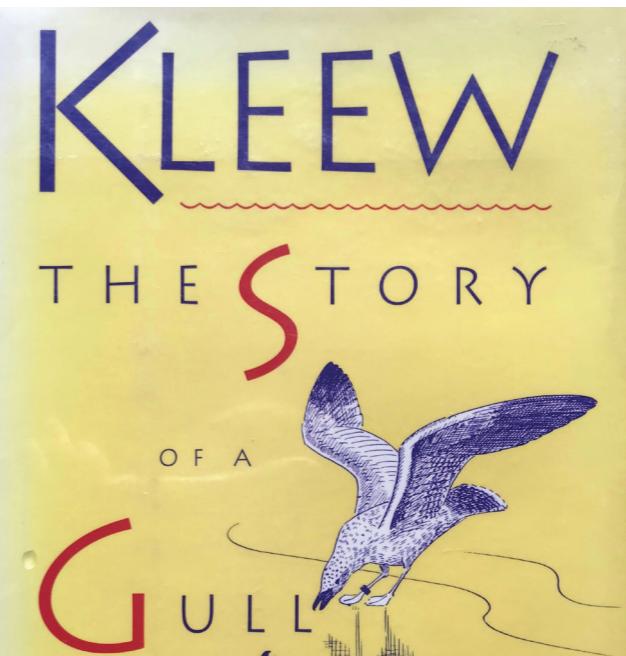
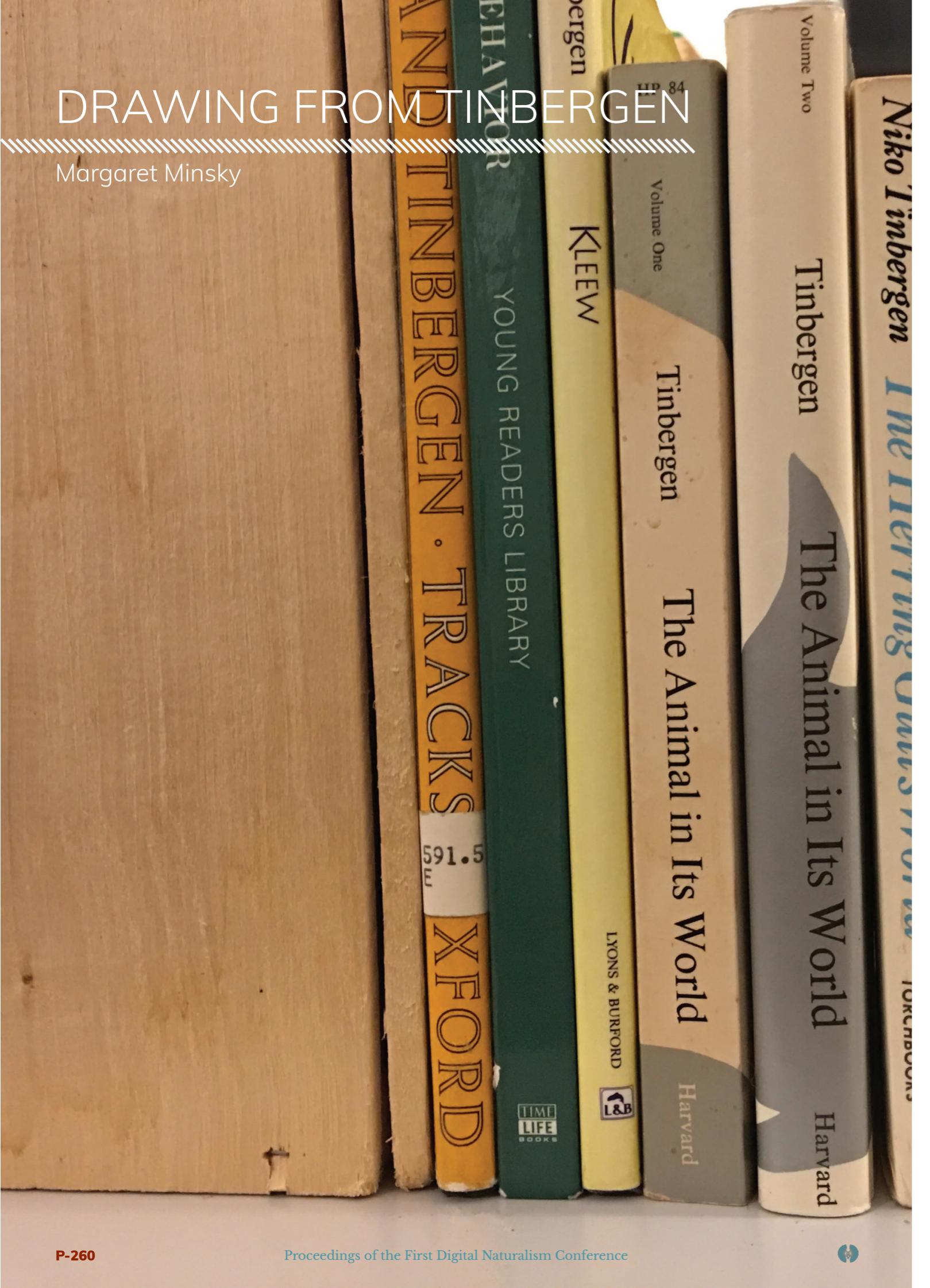
A KAYAKING (MIS)ADVENTURE

Michelle Tan
(feat Dani and Shreyasi)



DRAWING FROM TINBERGEN

Margaret Minsky



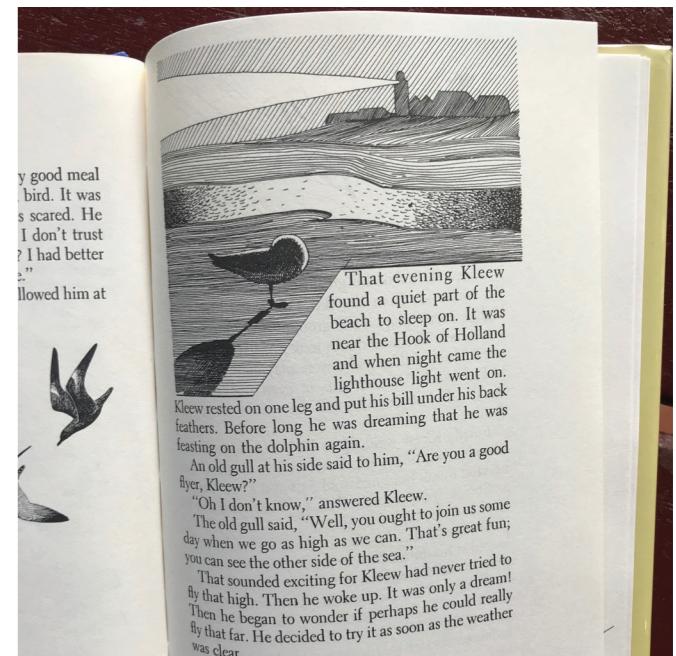
At Dinacon I did some drawing. I chose to copy drawings by the great ethologist Niko Tinbergen, from one of his lesser-known books: Kleew, a book for children about a gull.

Here are two illustrations from that book, and my rendering of the illustrations on the cover and page 23. I use the only drawing tool I can control yet, the PaperMate SharpWriter #2 mechanical pencil. I hope to learn how to draw with technical pens.

I learned so much from copying these drawings. One technical thing I love is Tinbergen's construction of shadows and use of them to establish planes and surfaces.

My renderings:

My original Dinacon application proposed creating wearables based on "the drawing style of Tinbergen". I wrote that from an intuition or memory that Tinbergen had any drawing style at all. I knew that his ethology books were illustrated, and I knew that my father carefully prepared slides of, and showed, a series of Tinbergen animal drawings in all his talks during 1973-85 or so. Tinbergen's ability to make a theory of animals' minds was one of the keys to my father's "Society of Mind"

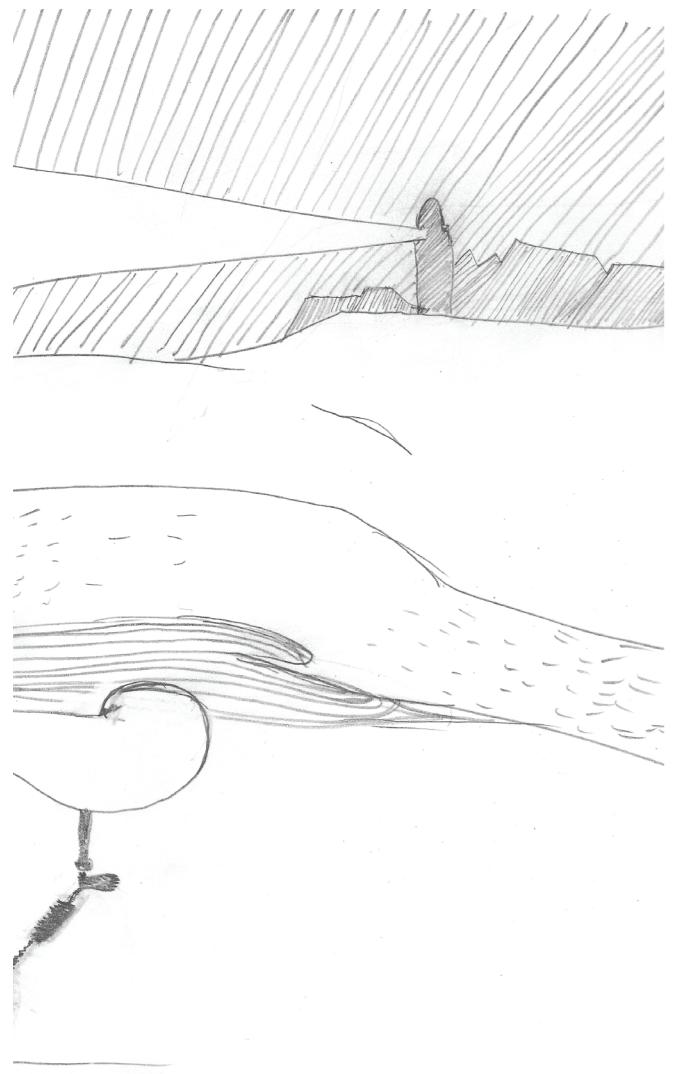


theory.

Another intuitive basis for my proposal was Andy's Digital Naturalism tenet of "seeing or sensing" from creatures' perspectives in their natural environment, an idea that permeated the invitation to apply to Dinacon. I'd probably subconsciously absorbed that Andy himself was strongly influenced by Tinbergen, as mentioned in his Hacking the Wild book.

A few weeks later, preparing for Dinacon, I thought it best to check whether Tinbergen did indeed do his own drawings! Yes, he did, and in fact was an artist before he became a scientist. In a lovely piece of scholarship on Tinbergen's life in art, Robert Root-Bernstein tells of Tinbergen's teenage magazine cover sales, and later during his faculty years of his tutelage by a master artist while imprisoned in an internment camp for his non-cooperation with the Nazi regime.

During the internment, Tinbergen created illustrations for his own children that he later turned into children's books. One of those books, Kleew, is findable on the used market. I haven't been able to find the other one about sticklebacks. Tinbergen published many other books for the public and



for children, some including his photos as well as writings.

Before I set out for Dinacon, I collected all my existing Tinbergen books, and ordered the others that I learned about during this research. Here's the whole collection, all are recommended. Tinbergen's drawings and photos, are integral to his work.

Copying these drawings is sweet and hard work. It is window into a great mind. Learning the techniques to use in illustration and drawing, is a meditative work in progress, difficult and rewarding. To work on that surrounded by the people of Dinacon 2018, on the Andaman Diva and in the main house, was a joy.



Bibliography:

Minsky, Marvin, Society of Mind, Simon & Schuster, 1986

Quitmeyer, Andy, Hacking the Wild <https://www.scribd.com/document/267993491/Hacking-the-Wild-Making-Sense-of-Nature-in-the-Madagascar-Jungle>

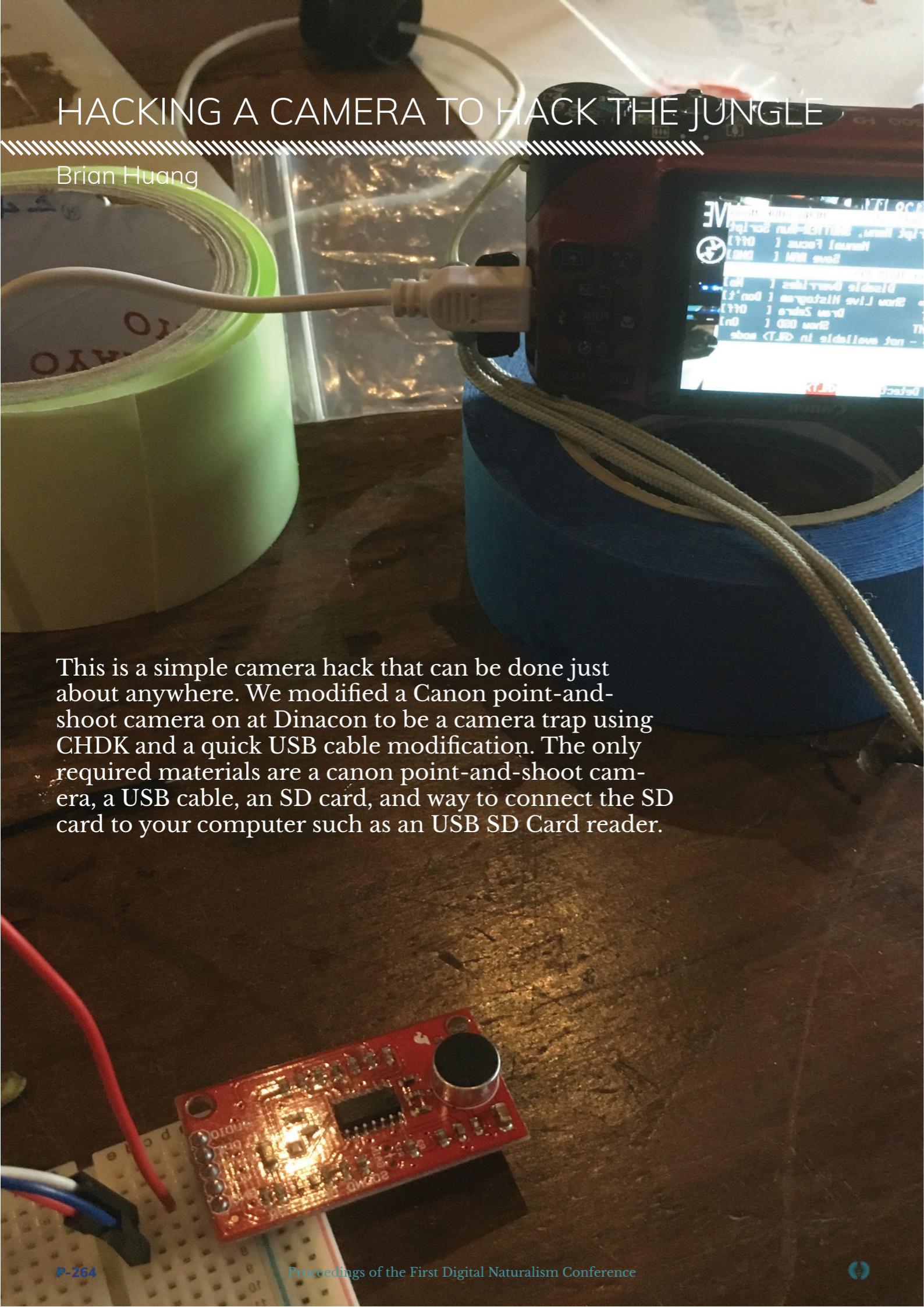
Root-Bernstein, Robert, "Niko Tinbergen's Visual Arts", Leonardo, Volume 37, Issue 2, April 2004

Tinbergen, Niko, (you can see citation info on the spines above. The orange one is Tracks, Ennion and Tinbergen)



HACKING A CAMERA TO HACK THE JUNGLE

Brian Huang



This is a simple camera hack that can be done just about anywhere. We modified a Canon point-and-shoot camera on at Dinacon to be a camera trap using CHDK and a quick USB cable modification. The only required materials are a canon point-and-shoot camera, a USB cable, an SD card, and way to connect the SD card to your computer such as an USB SD Card reader.

Home



**Unleash the POWER
in your Canon PowerShot!**

What is CHDK?

- Canon Hack Development Kit
- **Temporary** – No permanent changes are made to the camera.
- **Experimental** - No warranty. Read about the risks in the [FAQ](#).
- **Free** – free to use and modify, released under the [GPL](#).

Features

[CHDK User Manual](#)

New to CHDK? Start here!

[CHDK Downloads](#)

Grab the latest build, updated nightly

[F.A.Q.](#)

Frequently Asked Questions

Most point-and-shoot Canon cameras have a fairly limited number of features directly accessible through the buttons and on-screen menus. There are a wealth of features that are hidden or directly in-accessible to ensure ease-of-use for the general consumer. A group of hobbyists developed a method that allows you to access these features using what is called CHDK (Canon Hack Development Kit).

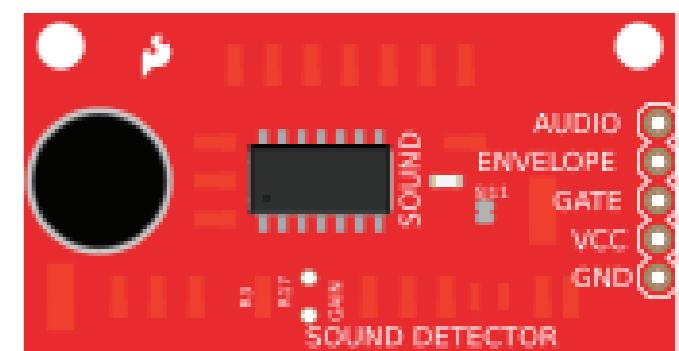
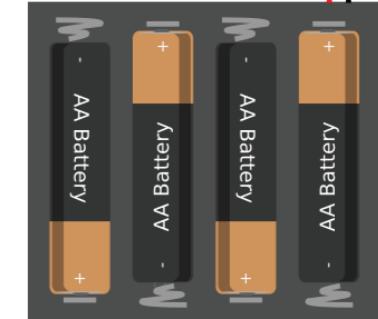
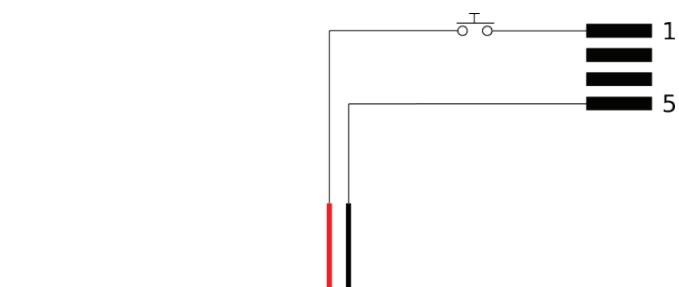
Among the many features that this enables are remote triggering, motion detection, and time-lapse. The one that we are most interested in is remote triggering. This will allow us to trigger the shutter using two external wires that we can connect directly to a micro-controller or sensor directly.

Installing / Setting-up CHDK

To add CHDK, you go to the CHDK wiki page <http://chdk.wikia.com/wiki/CHDK>. Click on CHDK Downloads

From here, you scroll down to the bottom and click on the latest Stable Builds which will direct you to a list of different files for different camera options. Search down the list to find the one matching your camera.

Click on the latest stable builds
Search for the file that matches your



camera

Installation

The installation is simple.

Insert the SD card from your camera into your computer. You may need a USB adapter for this.

Download the .ZIP file for the camera that matches your model. Unzip (open / un-compress) the file and move the contents to the SD card for your camera.

Re-insert the SD card back into your camera.

The CHDK firmware will be invisible to normal use. To activate the CHDK features, go through the following steps:

Press the Play button to turn on the camera (not the power button).

Press Menu Firmware Update...OK

From here, you can poke around and play with the new features CHDK enables on your camera. Some of the interesting ones that you might want to play with are:

Professional control – saving RAW files as well as the JPG, bracketing, full manual control over exposure, zebra mode, live histogram, grids...

Motion detection – triggering the exposure in response to motion in the frame.

Scripting – control the camera using a simple scripting programming language to do time lapse, motion detection, and other pretty cool things.

CHDK Remote Triggering

The feature I'm interested in is the remote triggering. This is one of the many features that you can enable in the CHDK menu. To enable this, first enable CHDK on the camera:

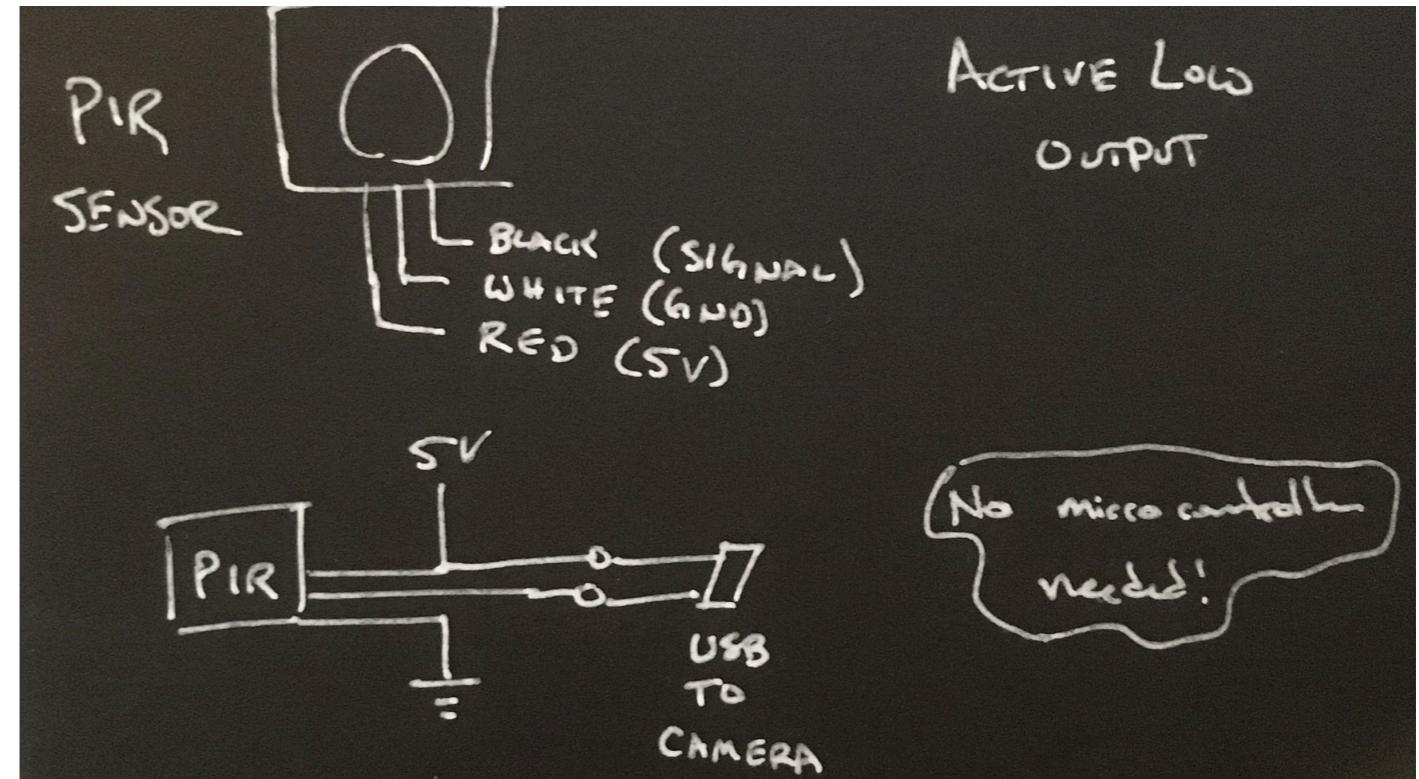
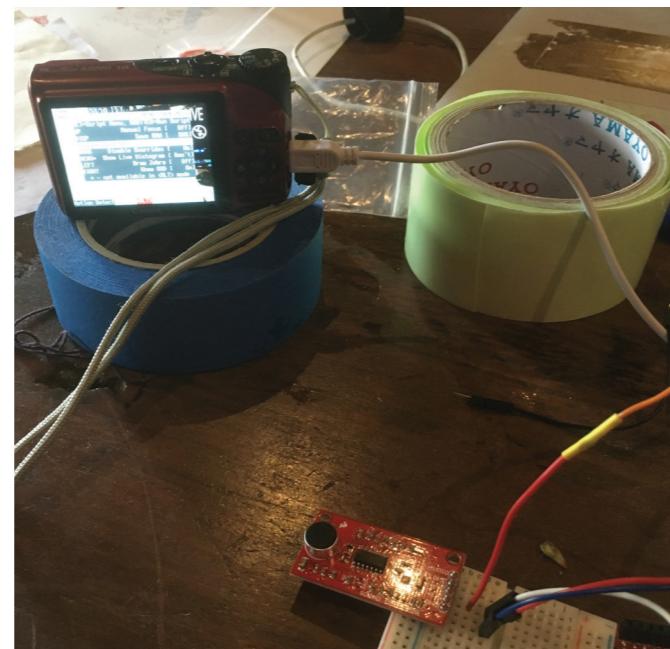
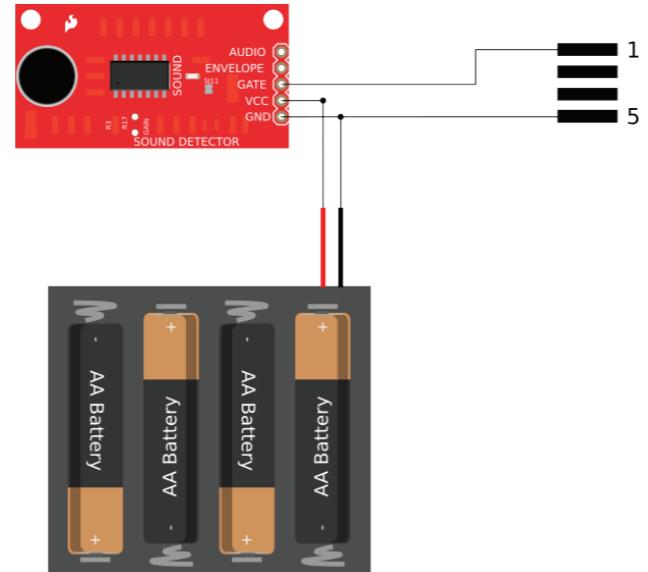
Press the Play button to turn on the camera (not the power button).

Press Menu Firmware Update... OK

Now, enable the Remote trigger:

Press Play Menu CHDK Settings Remote Param. Enable

Preparing the cable



Now, we need to modify a USB cable to use for triggering. Most Canon point-and-shoot cameras have a mini-B USB port for transferring data (pictures) back to the computer. The mini-B USB connector has five connectors, but generally most cables only have four wires. The fourth pin is only used on some devices for special signals. Pins 1 and 5 are typically used for power and ground for charging devices. With CHDK on the Canon camera, these two pins can be used for remote triggering. You can trigger the shutter when you apply a 5V signal between the red wire and black wire. Here is how to prepare your cable:

Take a standard USB mini-B cable. Cut the cable in half or to the length that you need for your remote trigger. Strip away the insulation to expose the wires inside the cable.

Cut back all of the cables except for the red and black wires. These should correspond to pins 1 & 5.

Expose the conductor on the red and black wires to use for your trigger cable. There are a number of techniques to trigger your camera. The easiest one is connect a battery and a switch. We used a 4xAA battery pack and a simple

momentary push button switch. 4xAA batteries provides ~6V. which is in the same range as the 5V required signal to trigger the camera.

Now, how can we trigger this with a sensor? There are several options to do this. You could connect these connections directly to a microcontroller like an Arduino or Micro:bit, but we wanted a setup that didn't require additional hardware.

Sound Detection

SparkFun has this simple to use integrated sound detector board (SEN-12642). The connections on the board are simple. Once you connect power and ground to the sensor, there are three sensor pins that you can use:

Audio – raw audio input scaled between 0 and 5V.

Envelope – the amplitude of the audio signal, only.

Gate – a binary (on / off) signal indicating when a sound is detected.

To use the sound detector board with the CHDK remote trigger on a Canon camera, connect 5V (or the positive side of the battery pack) to VCC, connect GND (or the negative side of the bat-

ter pack) to GND, and finally connect the GATE pin to pin 1 on the custom USB trigger cable.

Here is a quick mock-up of what we put together using a breadboard to connect the wires to the sound detector board. A soft clap is enough to trigger the sound detector and the camera. There is an extra resistor that can be modified on the board to increase the sensitivity, but we were afraid that it might still not be sensitive enough to detect small animals.

Detecting Motion

Another common sensor used in many projects is the PIR (Passive Infrared) motion sensor. You can find this sensor in many places including commercial security monitors and motion activated lights.

PIR Motion Detector – photo credit: SparkFun Electronics

This sensor has only three pins: power, sensor signal, and ground. The sensor signal is an ‘ACTIVE-LOW’ signal which means that when a motion is detected, the signal will go from 5V to 0V. This is the opposite of how the sound detector board worked. To use this sensor, we have to flip the wiring a bit. Here is our wiring sketch:

Again, no need for a microcontroller with this setup. One thing to note here is that the PIR sensor that I have uses a slightly unconventional color scheme. Red – 5V, White – GND, and Black – Signal.

This setup differs slightly from using the sound detector board. Rather than connecting the signal wire to pin 1 (red wire) on the USB cable, here we are connecting the signal wire to pin 5 (black wire). When a motion is detected, the pin goes LOW and the camera is triggered.

Here, we have wired up a quick proto-

type of this setup. The Redboard Arduino in this photo is only used for power.

Test Results

The results are a little mixed, but here are a few random pictures that our camera trap picked up. We didn’t pick up any ‘natural’ wildlife in our testing, but we did get a few interesting candid photos:

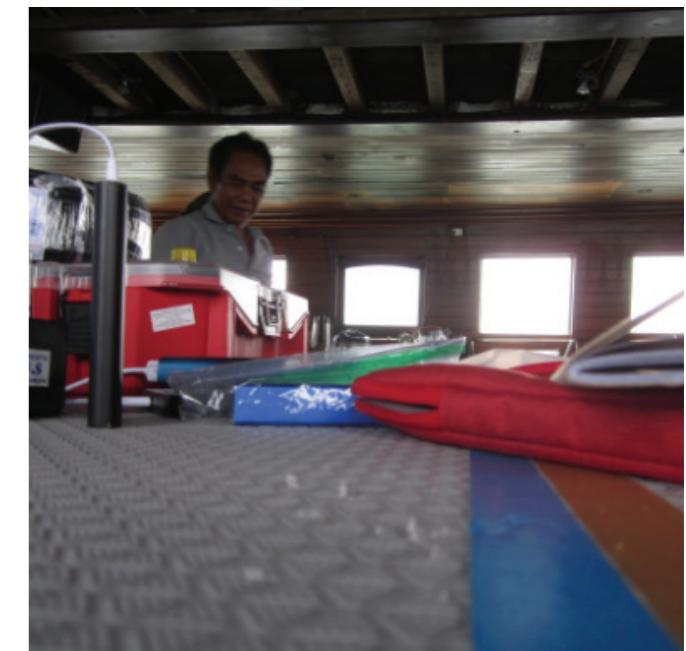
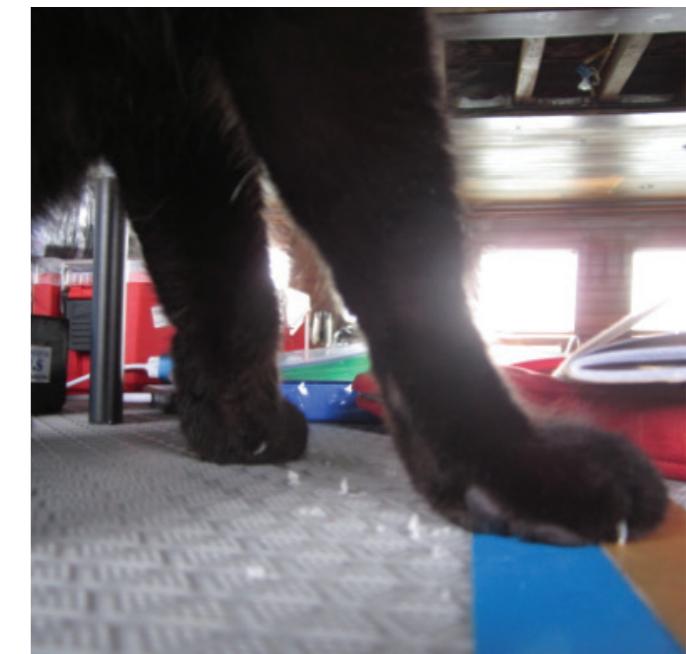
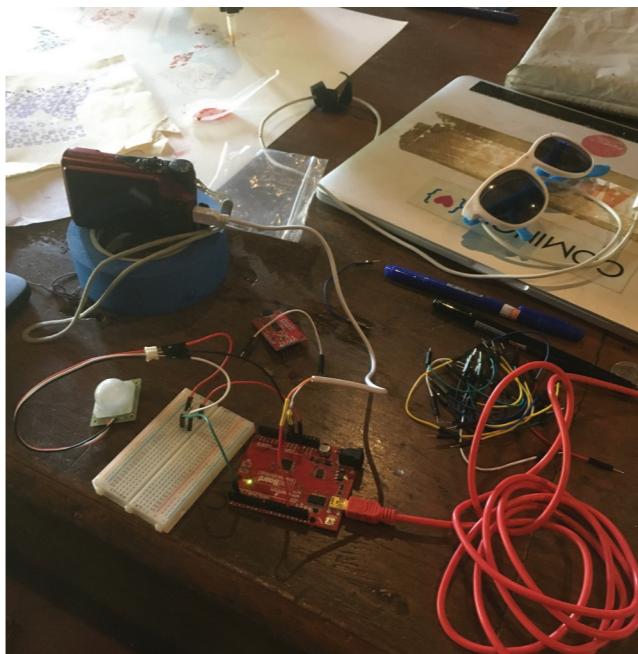
Going Further

CHDK is an amazing tool to customize and control your point-and-shoot Canon camera. The CHDK community has a lot of great resources and tutorials around scripting and accessing the other features of your camera.

The one drawback we found was maintaining power to the camera during long periods of time. On the bottom of the battery compartment is usually a small rubber gasket. This is to be used with a direct AC adapters to allow you to connect the camera to external power. These look like a empty plastic battery housing with a cable or connector.

Using something like this could allow you to setup a camera trap to last indefinitely.

We hope this inspires you to dust off your old Canon point-and-shoot camera or pick up an older model at the local thrift store. Happy hacking.



TECHNICAL ENVIRONMENTS

Erik Zepka

For the conference I did a series of projects, exploring different media and formats. I did a series of interviews with other artists/scientists at the event (Sebastian, Pom, Saad, Paivi) and took the footage for what will likely be a couple of short films – neither of these are completed at the moment. I've included photos of the installation I did over the 10 days I was there – it's a Waste Calculator (Foamhenge) – where past land formations and sculptures have measured the sky over time, mine measures the accumulation of junk. In addition, I wrote the text immediately following the images.



Gilgamesh and his companion Enkidu, after fighting their way to friendship, set out to the Cedar Forest on what will become their first heroic adventure. They seek out the monster that guards this forest, Humbaba. When they find him, Gilgamesh offers up Humbaba his sisters as companions for Humbaba and when during the discussion the monster's guard is down, hits and contains him. Humbaba pleads for clemency, but little heed is given and when he tries to escape Enkidu decapitates him. Victorious, the heroes bring the head Enlil gets pissed, reminds the pair of everything Humbaba protected – Humbaba should have “eaten the bread that you eat, and should have drunk the water that you drink! He should have been honored.” This episode illustrates at least a couple relationships with the forest – Enlil’s and the one shared by Gilgamesh and Enkidu. The conversation about it comes about with action by the characters: the protective sphere of the forest becomes an epistemological explanation in the wake of anthropic interaction. We might ask how to think about the forest for the trees, how the story’s interesting take on a narrative trope gives us purchase to reflect on the roles such entities might play in a relationship, whether we lived through it or imagined it.

Full Text at: <https://www.dinacon.org/2018/09/30/erik-zepka-2/>



STEAM EDUCATION + PLAY

Raja Schaar, MAAE, IDSA

Assistant Professor, Product Design, Drexel University

STEAM education, PLAY, and Environmental Art: Designing a Field-based Curriculum

My goal was to use Koh Lon as a testbed to prototype projects that combine Play (as a curriculum approach), LittleBits, and Environmental Art for a site-based Environmental Science after school program. Specifically, I sought out to develop project examples that could be categorized as either Environmental Art, Biomimicry, or Citizen Science.



P-272

Proceedings of the First Digital Naturalism Conference

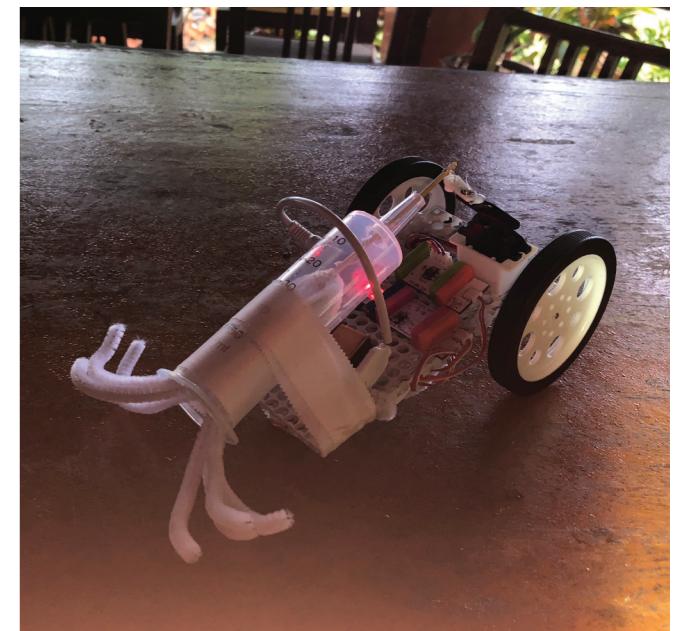


A visit from students from BCIS Phuket gave me a chance to give a LittleBits workshop to demonstrate how the electronics STEAM kit worked. LittleBits is a magnetic, color-coded, electronic, hardware system that allows users to quickly prototype sensor driven electronic circuits without the need for soldering or coding. <https://youtu.be/kXQx-aK-0lU>

I experimented with some projects that included a cloud connected wave counter that made use of the transmitter and receiver bits, as well as the Cloud bit. But this proved challenging given the limited access to Wi-Fi. But had the internet cooperated my intention was to combine wave frequency with data from the tide calendar, temperature, weather reports and boat traffic to see if wave activity was an a better indicator of human activity or natural influences.

I even had a chance to collaborate on another participants Coconut Synthesizer by hooking the audio Bits needed to broadcast sound and adjust the volume. <https://youtu.be/VBeaPSPcqO4> And while LittleBits could have been used for the synthesizer hardware as well, as a proof of concept, this was demonstration of LittleBits as Environmental Art—where natural materials are used in conjunction with the hard-

ware to create art inspired by nature.



The spirit of my DinaCon project was really about letting play, exploration, and inspiration drive what I made. While on the island, I had the chance to explore and play with some of the indigenous creatures, and I developed a special bond with the hermit crabs who kept me company on my frequent night walks along the beach. One of their behaviors that caught my attention was their reaction to light. <https://youtu.be/nix-8QqOOks>

So with that in mind, on my final day at DinaCon I decided to use the LittleBits to create a biomimetic hermit crab robot that slowly crawled along, and can either stop and retreat into his shell when light is detected or runs away from the light. I used a servo motor and pipe cleaners to imitate the crawling motion of the claws while using a DC motor to actually drive the ransom motion along the ground a plane. When the light sensor detected light the servo would swing back pulling the pipecleaner claws back into a syringe tube that behaves as a shell and stopping the motor. Or in the example here, the DC motors change direction, the servo motor swing speeds up, and the crab runs away. <http://www.youtube.com/watch?v=E7Znx8utAno>

Koh Lon, Thailand, 2561

P-273



INTERVIEW: DINACON LEADERS

Tasneem Khan and Andy Quitmeyer Interview
Seamus Killdall

At the conclusion of my time at Dinacon, I interviewed the two organizers: Tasneem Khan and Andy Quitmeyer. This was a special time and I was grateful for the opportunity to get their thoughts before I left.

Full interview at <https://kildall.com/category/dinacon/>



<https://kildall.com/interview-with-tasneem-khan-and-andy-quitmeyer/>

Scott Kildall: Hi! Would each of you please give a short self-introduction?

Andy: I'm Andy Quitmeyer and am a researcher, who is studying how we can use interactive technology to help us explore nature and other living creatures.

Tasneem: I'm Tasneem Khan and am a researcher and am exploring the idea of using place-based learning with different learner groups to understand how immersive experiences in ecosystems might affect responses.

Scott: And how did you two meet each other?

Andy: Tasneem sent me a random email that said something like "hi, I'm a friend of a friend who said I should check out your work and I'm going to be in Singapore soon", which is where I was living. And a few weeks later we had lunch. My reaction was "holy crap you're awesome and driven, let's run a giant conference together". And Tasneem was game for it.

Tasneem: We literally discussed that just a half an hour into our lunch. I loved the idea of running it and mixing both our styles. I've worked with running programs for large groups of people in weird remote places and Andy has done a lot of exploring and teaching with the concept of "digital naturalism."

Scott: So you jumped into doing this conference but both had a pretty complimentary background in running conferences and organizing people. So it wasn't that you came without inexperience just not of working with one another.

Tasneem: Not really. I have had experience with learning groups, curating residencies and collaborative expeditions, but not conferences of this scale.

Andy: Yeah, this is new for both of us. I've organized expeditions and workshops but never anything on this scale. This is easily eight to ten times bigger than anything

I've ever done before.

Scott: Maybe it's time to explain what Dinacon is. Why do you call it a conference because it being here sure doesn't feel like one. It feels more like a residency or a hacker camp.

Andy: Dinacon is a six week conference that Tasneem and I are running with the help of lots of other amazing wonderful people. It's primarily targeted originally towards interaction designers, artists, and field biologist but we're open to anyone who's interested in any of these commingling ideas.

Tasneem: I'd say that Dinacon is the coming together of people, which is a conference in the most literal sense. We decided to do it because of a common ideology towards how people should work regardless of their areas of expertise. We believe people can work in a better environment to collaborate in a specific space and apply their expertise to both the field and to real life.

Andy: Yes, it also emerged from a common disappointment in how conferences are often run with a rigid structure where many people care more about what they can put on their C.V. than the actual conference itself. So, we wanted to undo the things that are not so great about conferences and open up the structure and give people time. It's important to have both freedom and time to relax and soak in both the natural context and the impact of all these amazing people around you.

Scott: Great. And where are we right now? What is the conference venue for Dinacon?

Tasneem: We've chosen a tropical island — Koh Lon — which is a small Island off the Southeastern side of Phuket in Thailand. The reason we specifically chose this site, as opposed to any other of the hundred islands you have around here is the proximity to Phuket. This was our first conference of this scale and we had a hun-

dred and thirty people expected from all over the world, most of whom we hadn't met before. So from a logistics and safety point of view this made a lot of sense, it's a ten minute boat ride away from a big city, hospitals, airports, anything, one might need provisions and so forth.

Andy: But we're still quite on our own.

Tasneem: Yes. The great part about it is that the island has a population of only a couple of hundred people. You have access to pristine forest on one hand and the ocean on the other. In terms of selecting a location beyond practicality, one of the things we really wanted was to give people access to a cross-section of environments and Koh Lon gives us that — everything from the ocean to the forest and a range of connecting systems in between.

Andy: The main facilities of our conference are a big main tropical jungle house, that's the central area, let us call it the headquarters. In front of that is a large campground, a grassy field that's also surrounded by jungle and a beach-front, as well as little cabins that people can rent out at a pretty subsidized rate.

We also have the Diva Andaman, which is a glorious ship that we were able to use with the generosity of Yannick Mazy, the owner of Diva Marine. So, people can work on the beach, they can work out at sea, they can go voyage off into the forest and just soak in everything and really rapidly test whatever kinds of devices or art projects or things that they want to do that involve nature and just test it right away with the natural resources there.

Scott: Wow. And then with all these sites of activities, what's the role of chance encounters? What's the intention here about how people might be interacting?

Andy: I see my role as a conference organizer to heighten serendipity, and so I just try to mix together loads of interesting factors: nature, the people, the places, the devices they might be able to use and

just try to increase the chances that these things might lead someone, for example, to make a cool hermit crab project.

Tasneem: With my practice in general and this attempt to push interdisciplinary work across subjects and across spaces. I view it like Andy said but also as way to think through the experience and ask questions — like, what are the kinds of people we want to bring in? What are the kinds of people we hope to attract? What is the work that we have no idea about that can surprise and illuminate each other.

Do this, while curating how can the aspects of place influence people's work and interactions

What we make available to participants can change the way they work, the way they think, who they interact with and what they produce in that space.

We have intentionally not put in too much work into programming activities every day because we want that to be organic and flow from the participants and from the place but what we have put a lot of effort into thinking about what to make accessible and the experiences to create for people in order to trigger and drive that enthusiasm and inspiration to work with each other and with the place.

Scott: So then, how did you select these people? Was there an application process? How did you pull through that process and how did you promote these diverse networks?

Andy: We had lots of forms for people to fill out. [laughter]

Scott: It was not bad at all.

Tasneem: We were trying to steer away from the overly bureaucratic approach to conferences and all the ways people need to prove themselves — like you'd only be allowed to enter the conference if you had a certain paper to present. Also, we wanted to be cognizant that many people

don't have money through institutional backing to spend on a conference.

We still had a couple of basic forms. Andrew's great social media network and ability to reach out to people made a big difference.

Andy: In order for people to get here, we first had just a super simple initial application form, which we sent around. Anyone could apply. It asked people what they might want to do here and to share an idea of what they would spend there time doing.

We also wanted to convey the understanding that a project might change in the next six months between when you think of your idea and then when it gets closer coming here and then of course once you're on the island, everyone's ideas blow up or somehow transform.

We had some different criteria because one thing about having an extended kind of conference like this is that it makes certain time slots a bit trickier. So like if everybody wants to come the first of July or something like that, it was a bit harder for us to choose some people. Then we asked people to open their dates be flexible and move around because we tried to fit in as many people as possible.

Tasneem: We tried to ensure that we had no more than forty people on a single day. So one of the big criteria was just practicality and logistics. If people were willing to move around, they could be most often be slotted in.

Andy: Given our extremely minimal application process, if the applicants showed that they were genuinely interested in Dinacon, that was something I think we evaluated more positively than whatever their project was. We looked at how interested did this person seem about the place, about the people and about the kind of tools they work with.

Tasneem: Many people wanted to come

and just learn, but we felt that they needed to be making and doing something that other people can learn from as well. Therefore, one of the main things we were looking at in applications, was their own project ideas and intent.

Scott: So that brings up the three rules of Dinacon...Dinacon pronounced like a dinosaur right?

Andy: I think it depends where you come from I think technically since its the digital naturalism conference, that you'd be dinna-con

Scott: that sounds like a British person saying dinner.

Andy: Yeah exactly.

Tasneem: Which is another thing by the way, so we have been have a subculture of 'dinna-con' that has emerged for people who like to cook, forage, eat and experiment with food.

[laughter]

Andy: But at least from an American perspective of a kid who likes dinosaurs, it's totally Dinacon.

Scott: OK. So what are the three rules of Dinacon?

Tasneem: First, you have to make something, so it puts emphasis on the creation and your own thought process in the context of our location. Then, you have to document it because we're all for making things available or accessible and not storing them away on your shelf or in a journal. So you have to share what you do in whichever format you like and finally take the time to engage with, review and provide feedback on somebody else's work. So those are the 3 rules. To make, document and review.

Andy: They're still based off this idea of how our academic conferences work but in a kind of inverted model. Instead of



writing a paper and then get it pre-reviewed by a bunch of busy people who tend to not have time to give anything but a quick glimpse and be like “oh, well they didn’t cite blah blah-blah.”

So instead inverting that and proposing “Hey, you’re still going to be productive here.” I think people tend to be more productive here than a lot of other conferences, and you’re still going to get valued feedback from people in the rest of your community. Another thing we’re talking about is a real key factor of Dinacon is taking people from very different fields and showing them that their work can be valued by and meaningful to people across these invisible borders we set up.

Tasneem: Here, your work can be reviewed by anybody who is from a completely different field of practice, place and perspective.

Andy: An artist can review a field biologist paper, who can review someone’s robot design.

I think that will truly test how effective your work is in terms of – have people being able to understand and relate to your work. Have people been able to apply it or at least generate ideas that deal with you and your work? That forces an interdisciplinary approach to push people to step outside their comfort zone and express themselves in new formats rather just a written paper. There’s nothing wrong with the paper, but we are asking how can we communicate that in different ways.

Scott: Excellent. So then, can you talk briefly about the term Digital Naturalism? Is it one that you made up? I didn’t find that defined on Wikipedia.

Andy: Digital Naturalism was the subject of my PhD. Research. So in essence, I just made it up. What I was looking to do was taking all of this digital technology that we have available which is really fascinating for looking at nature because it’s the first new medium that we have that can

really enact behaviors. If you think about animals, they can take input from the environment, they can sense things and they can also react to the environment, they can move, they can create light, they can make sounds, they can do all these kinds of actions that contribute back to the environment.

You can get these behavior cycles and networks of things interacting with each other and then you have computer technology which is kind of the first technology we have that can also do this: it can take in inputs from its sensors, it can buzz, it can beep, it can turn on LEDs, so it can communicate back. What I’m really fascinated by is how we can use this interactive digital technology to join into these networks of natural interactions and create these dynamic systems between creatures and computers and see what happens. This is a bit in contrast to the way a lot of technology gets used with looking at nature and a lot of sciences.

And that’s where it has much more of just a pure utilitarian use. There’s a bunch of things happening in nature. We want to extract all of this data and then do something with it.

Such as find out where the oil is, see how we can get the honeybees to pollinate our field better, something like that but instead — well, that’s why it’s digital naturalism, it’s not digital science, it’s not digital field biology because it’s going back to the naturalistic roots of field biology that’s more concerned with learning about creatures and systems for the sake of learning about them and experiencing them in visceral interesting ways and doing this more out of a love and appreciation for nature. That can also be quite useful, can be quite enlightening to people but its basis is more in love then utility.

Tasneem: I just wanted to add to that often scientists or biologists are out there working in the field and you have all this amazing equipment and technology that exists that works really well in laborato-

ries. However, if you look at the sphere of field equipment that can actually survive and do the work that the people serving, probing and studying nature or the environment need with them, it’s so limiting and that’s because the people who develop the technology are very rarely actually embedded in the space where the technology has to be used.

So I guess what Andy’s PhD was about in many ways, the idea that it stemmed from was this need to go out there and build in context and without it having to cost a fortune.

Scott: Directly related to this is the idea you two mentioned to me last week called “place-based learning”. So maybe you can talk about that in the context of this question, how have you seen that working in the jungle or on the boat has affected people’s work from their proposals to the actuality?

Andy: Oh it’s a lovely mutation that we have been witnessing. Two main things that I see a lot at Dinacon that makes me happy is intergenerational knowledge transfer within Dinacon, you have people coming and going from Koh Lon. The older guard will demonstrate, for example, how to open a coconut. The new people learn from the elders at Dinacon and so knowledge is transferred but then also there is a parallel mutation of practices that we see where someone wants to make this thing and then someone else might contribute something sideways, like “oh here’s this kind of stuff that I do with these weird leaves or these type of corkscrew devices” and then the first person says “huh, I’m going to incorporate that into my design” and then suddenly you have these writhing, wriggling bamboo creatures that are different than either of the original people were even thinking about the beginning.

Scott: Tasneem, I’m wondering if you can tell me a little bit more? I hadn’t really heard of place-based learning which means in my wide readership, hundreds

of thousands of people will not have heard of place based learning, I’m wondering if you could talk a little bit about what that really is.

Tasneem: Place-based learning is a big subject, but I will talk about it in the context of Dinacon. Let’s return to one of the initial questions of why eight weeks and how did we designed this? A lot of the way that I think learning happens comes from that act of allowing time in a space in a particular place. If you go back to the origins of art, science or philosophy it all stems from extended observation of systems that then led to inquiry, thought and expression. The subsequent subject divisions are just based on the ways of thinking and the methods we then choose.

Much about ‘learning from place and in context’ is about giving yourself the opportunity to do that if you give yourself the time to explore. One of our main goals has been that, to provide people time embedded in a particular place before going so far as to learning about it, to push them to ask the questions, to spend extended duration of time observing and then asking questions and then moving forward to the next step of whether it’s experimenting, creating or learning from.

Place-based learning is basically that: how do we learn the things that we otherwise compartmentalize in the subject of biology, engineering, sociology or whatever the subject you might choose to look at physics or robotics or chemistry. How you will remove those barriers and illuminate the context of the place you’re living in. What can one extract from a space and you’ll notice that it’s actually a huge mesh of interconnection of all these different subjects. I can’t start answering questions about the water or the ocean without addressing the chemistry of the water, the composition of the water, the physics of what happens when you go to 1 meter below the surface of the water, the biology of what actually lives in one single drop of water and so on.



So I would say in a sentence — well I don't want to be defining place-based learning because it's already defined by many experts — but to me, place-based learning is to be able to learn in context without subject barriers, so more of the emphasis is on the method of learning rather than a linear process. So even though this is not a class it's a group of people who are yet to explore their own subjects and interests all feeding off and learning from the common systems they are situated at.

All the people and projects at Dinacon have gone through a process of metamorphosis — they came in with an idea (which is why we didn't put too many constraints on how they have to make their proposal) then the place and people in it affected that idea.

The place has helped refine the question and define the methodology that they then use. We've seen that with so many people. Jennifer, for instance, came to do work on this project with food, eating, foraging and documenting herself eating things that she's collected but she ended up discovering so much — like finer aspects of how to make salt and she then spent her time collecting seawater and making different kinds of salt, which for her was a revelation.

For instance, she explored how one can extract formic acid from a weaver ant and then use it in the right way to add flavor to a salad. So, her work was not something that I had given much thought to before she came here but it was so rewarding to see how people's learning process and then the practice and the output can transform.

It wasn't anything we did, it was just what she observed from the ants and from the ocean, what she learned from other scientists and practitioners, how she then chose to apply it — that's what place-based learning is.

Scott: Wow. Excellent. Shifting gears here...can you tell me about the different

areas for making. What do you have available?

Andy: In terms of the facilities we have a whole suite of interactive electronics, prototyping stuff, zillions of different types of sensors, actuators, motors, breadboards, soldering irons, different things that you would see in an interactive electronics labs, a whole crap ton of Arduinos, the various different flavors and shapes and sizes and powers and things like that.

We also have mold-making equipment for doing casting and natural forms, we have biological workbenches with microscopes, vials, tubes, insect aspirators. We have a whole textile zone, so we have sewing machines, buckles, zippers, fabrics. We have yarn crafting stuff like yarn, plastic yarn, needle, a loom.

Tasneem: Lots of art and craft stuff. So I mean anything you might need from bits of copper strips to glue of every kind and tapes.

Andy: Sharp cutting knives and hand tools and power tools like drills. little mini projectors, robotic arms that have different heads on them, which can function as 3D printers or laser engravers.

Tasneem: We have a vinyl cutter, a sticker cutter. Since we're on an island and electricity is diesel generated and that's not always reliable and it's not very sustainable, so we've set up solar panels as part of our collaboration with Yannick. And we have electricity pretty much all the time, even in the storms.

Scott: What were some of your expectations with this event and in which ways were the expectations met and what were some of the surprises both positively and negatively?

Andy: It feels a little weird to say but it kind of came out how I expected. We got a bunch of weirdos together and we put them in a really amazing place and things started taking off and they really enjoy

working with each other, chatting, cooking, living, sharing tons of cool ideas and that's kind of what I expected. I was a little bit primed for that from experiences of other places that had kind of similar models that we built off of like PIFCamp in Slovenia or the Signal Fire Arts Residency.

So we've kind of seen this model in action a bit before but what I was not as much prepared for is how well it would work and the caliber of the people and how many just brought it when they got there.

Tasneem: People come in for one or two weeks, they arrive with such great energy and they're willing to give all seven or fourteen days — everything they have which is a great vibe — because we all feed off each other's energy.

Andy: I think maybe one thing I didn't expect as much, not a good or bad way but I kind of the life cycle of a person here at Dinacon where the first like a day or two, they're kind of in a daze and they just show up and are confused or just stoking things in their brain, or maybe swollen with all kinds of crazy stuff.

Tasneem: A sensory overload!

Andy: Totally. So then they start jumping on it and then something switches and then they're starting interesting projects and they're helping out with the next round of dazed new people who are coming in. Then they realize "oh, I have to leave." It's always too early.

Scott: How long do people stay here at Dinacon?

Tasneem: One of the things that was intentional was to not have a structure that would define how this must run. So we left it open to participants to choose how long they would stay. I do however feel strongly about extended time — whenever I've run programs for students I notice that nothing less than seven days is something I want to engage with. Because when you

work with this model of immersing someone in a new environment and the whole idea of trans-locality and what people learn from a new place, you have to acknowledge that fact that the body and all your senses together need time to absorb, assimilate and then respond in a new environment.

For example, for someone who has never been to Asia before, they suddenly find themselves staying in the jungle and riding on a boat... with new sounds, new smells, a new time zone and new flavors. You're surrounded by all sorts of people and so much information being thrown at every part of your body that you need to give yourself time to take in, to reflect. So in terms of an expectation, I wish that everyone had stayed for a minimum of seven days.

Andy: Yeah I think I think that's about the average stay of a person here is six days, the longest stay I think has been about twenty days. You're around that.

Scott: It's been incredible.

Tasneem: You and Vanessa and I think a few others...you can see the work, the outcomes, the collaboration and the interaction in general around people who stay for long is different from the ones who just got a brief taste of it.

Andy: So our original rules we set up was just something like minimum three days, maximum three weeks and the three day minimum was in response to academic conferences, which often only last three days.

Scott: Can you describe like what might happen in a single day in Dinacon.

Andy: For a slice of a single day maybe people wake up, people kind of slowly getting up at different times. The kitchen might be busy with people cooking different leftovers, things like that, people kind of waking up, getting into the day, someone's busting out the soldering iron



already and like you know carving into some bamboo, making a fun robot caterpillar and then maybe someone decides to take a kayak trip around the island and so they lead people off.

Meanwhile, other people are collecting people saliva to look at the crystallizations of different hormones in them throughout the day and then you'll have...

Tasneem: A lot of building happening, people making things like robots and working on project boards to actually outdoor building and bamboo crafts.

Andy: Yeah and then usually people are kind of snacking throughout the day, getting some kind of lunch, again it's still pretty informal. Towards the afternoon there usually tends to be a spike in activity. We have an online forum chat room where we're keeping each other updated, so maybe the kayak people say, "Hey, we found this weird creature, we're going to you know bring it back to the microscope" and then someone's coordinating bringing the microscope back from the ship and people are kind of talking about different things that they've shared throughout the day and then maybe food will come in, people might organize a beautiful sunset yoga, suddenly the giant flying foxes — huge bats — come out and people gather around to see that, maybe we go see someone do a presentation or an art performance outdoors or indoors and then suddenly someone posts a message that the water is glowing and they found a bunch of bioluminescence and then everyone runs out to the ocean to start exploring and investigating what's going on. Why is it glowing and how do you make it glow? So there's a lot of these serendipitous moments that appear throughout.

Tasneem: And the whole programming of it is also intentionally informal, we have a couple of boards which everyone collectively builds schedules on and general information about the day is put up. And then there's a online chat room which functions as a board for announcements

and coordination as Andy was saying, so if someone feels like sharing their work or going out for a walk or setting up sensors on plants, they usually put it out there and open it up for anyone else who is interested to come and join them, help them, learn from them or contribute to the work maybe with other devices and expertise. So it sort of creates potential for multiple parallel activities and you can plug into anything that you're interested or create your own. The evenings because of the group dinner, tends to become an interesting reflection, sharing of information, sharing of exciting things that happened that day and every so often semiformal presentations.

Scott: Can you talk about what are some of the logistical challenges? It sounds crazy to me and how do you maintain your own energy and positivity?

Tasneem: Like you said this is our project. Curating this experience and seeing it actually come to life is so exciting and the fact that it's all going so well, puts us in a high-energy state.

Andy: We just kind of roll with it all. Even if I'm like crushing through hours on the spreadsheet that's just a monstrosity and figuring out what the hell's going on, it's still a pleasant experience because of how much joy and activity is going on around you and you know if things get too intense I just go walk around in the forest, go take a swim, the nature kind of revives you.

Tasneem: It helps you put things in perspective. It's not so tragic if somebody misses a boat for instance, it's all okay in the larger scheme of events.

Scott: Andy was the one who saw me when I came off the boat when I was like spaghetti noodles were flowing out of my head. [laughter]

Tasneem: And that comes back to what you said of people arriving and how do they that sort of metamorphosize and they learn to sit back and loosen up a bit.



"Given that the response and the participation in the outcomes are so exciting, we are learning from every step along the way, there's no question of not doing it again and the only question would be where are we doing it again."



Koh Lanta, Thailand, 2016

ANALYSIS



Photo by Umeed Mistry

FEEDBACK ABOUT DINACON

Dinacon Participants and Committee

We tried collecting information about our participants, their goals, and their experiences in order to help the continued development of this conference.

This information was collected voluntarily by the participants in 2 phases. They were given an ENTRANCE SURVEY right when they arrived, and asked to fill out an EXIT SURVEY after they had left dinacon. The results presented here are condensed for space.



How did you like the completely freeform format?

awesome; I do worry that it placed an extra burden on you as administrators though because some people didn't keep you up-to-date or didn't understand how hard you were working to arrange their housing] Advantages: Varying amount of overlap between people was great as a source of continuity and of differentiation; meeting people who were long-termers and short-termers provided perspective. Also it gave people great opportunities to switcheroo between being mentee and mentor without everyone having to do that on the same day. You might want to tweak the minimum time to be longer (such as a week, then give people exceptions if they beg) because 3 days sounds short. The best thing about the freeform system was getting away from a typical camp or workshop lockstep of group waves with a new "tribe" each week. Instead, we felt part of the entire Dinacon, were able to have a wide range of relationships and dynamics, and experience varying pacing.

That was one of the great qualities! Though I missed a lot of people I would like to have met, it was great to always meet new cool folks

i think it would have been interesting to try to have weekly themes

I like it, but I wish there was more structure for how weekly activities occurred. Like hosting workshops, group cook days, exploration trips, etc. on specific days of the week, weather pending.

I feel like it would have worked better to have a few options of arrival and departure dates. This would help coordinate 'on-boarding' and 'fare-well's and periods of time / sessions. Almost like breaking the 6 weeks into time blocks.

i liked it (came in the last week), but wonder how that was for you.

Confusing but a worthy experiment. I like the idea of limiting the arrival windows for logistical reasons.

Great

Seemed ok - seeing who came later, I wish I had been there when more artists were there.

It was great to have the flexibility! But as someone who arrived at the very end of the residency I felt like I missed out a lot. That's only my problem, of course, but maybe imposing 2-3 gatherings over 6 weeks and making sure everyone is present for at least one of them could be helpful.

Amazing, I love not having structures at all for anything, works very well for me (I'm organized enough myself and I felt the same with the rest of the participants)

super bonkers wonderful

I liked that! I thought it might make it sort of hard to connect with people but i don't think that ended up being the case.

I think that worked brilliantly, keeps things dynamic and inclusive.

I liked it because it was interesting to observe how the dynamic of ever exchanging participants resulted in a collaborative weaving of the Dinacon narrative.

the freeform dates I thought was pretty cool.

On the whole probably a good thing: I'm glad it let us make things work with our schedule, but bummed we missed folks that came later. On the other hand, those folks that I missed came because that's when they were able to, so it's not like a more restricted date would have resulted in everyone being there at once

Liked the freeform arrival and departures. I would have struggled to commit to more time and would have struggled without flexibility in picking my time on the island.

What do you anticipate doing during your stay for your project? (Entrance Survey)

Documentary and website related Thai herbs	Work on a LoRa transmission system for our data (4)
Exploring natural elements with fabricating experiments	Niko art, music video, some other weird bio/tech art shit (2)
To share the progress of my project with everyone regularly and talk about new directions that it can take	Test/demo micro AUV (2)
Making recycled textiles with a recycled loom that I made	Building a data collection and visualization network. (2)
Loom that uses recyclable yarn	Nature based printmaking (2)
STEM based bilingual lessons	Micro cyan picto-grams (2)
STEM and Arts projects	IMMERSEA UNDERWATER AR + ZORB PERF (2)
Create STEM project	Wearables with microbits, inspired by animalimal sensing (2)
Making and sharing everything i can over the week	Hopefully finishing up some comics!
I will be working on a motion sensors and try to detect creatures to make the security better.	Get to know the flora and fauna of the island - create an art/science projects about their immunology, ecosystem, aesthetics and related things
Butterfly predation field experiment	Eco-art project - to be decided
Write The first draft of a storybook	Get to know the flora and fauna of the island - create an art/science projects about their immunology, ecosystem, aesthetics and related things
Bug hunting	Eco-art project - to be decided
underwaterstudiopractice	I want to make a map and a website documenting the island and sharing it with others. I want to hike, swim, look at plants and animals
Build a WAN network with Raspi	Gonna hopefully do some foraging and documenting of plant stuff on the island. Ideally making a map and or photos of stuff
Artist Book & Networking	Making sounds and music
Audio interactive	Create 10 postcard sized paintings of wildlife here
nature face construction	UV Photography, Microscopy
Article	Niko Cybiotica
Soil orientation and DIY soil analysis	Animal documentary + plant app
drawing project	Long duration time lapse and slow motion
Tools for Soil survey that could be used for different purposes in the future	I thought I was going to work on my knife roll, but instead I might do some low fidelity prototyping and illustrations.
Exploring, drawing, writing	Wearable tribe sensor network with sustainable prototyping
Wildlife Blockchain Project	Create an interactive photo exhibit; integrate with whatever Margaret builds
testing the underwater ROV, multispectral plant sensing	testing the underwater ROV, multispectral plant sensing
Playful interaction device	Playful interaction device
	capacitive coupled plants
	tree huggers costume



What did you end up doing at Dinacon? (Exit Survey)

i worked on designing a draft outline of a workshop session for students.

the outline is divided in three parts: engage, explore and evaluate. the objective of the workshop is: students will explore the various aspects of their surrounding and document it in the form of timeline and visual representation of their culture and ethnicity.

5 day long time-lapse study of Chalong bay

I didn't complete it, but I tried building a thumb piano w capacitive touch pads.

Dinnercon, weaver ant mukbang

<https://www.dinacon.org/2018/07/12/island-caterpillar-hannah-wolfe/>

Wild Tom Yum

I took pictures of ants for a key that I will need to finish in the coming weeks/months (as time permits)

Dinasynth Quartet (<https://kildall.com/farewell-dinacon/>) – I need to write something up for your Wordpress!

Tribenet: wireless mesh network for tribes (documentation on wordpress coming)

<http://mikcandy.tumblr.com/post/175669626337/scrubbug-at-dinacon>

<http://mikcandy.tumblr.com/post/175669550540/mast-climber>

<http://mikcandy.tumblr.com/post/175669540365>

<http://mikcandy.tumblr.com/post/175669535770>

<http://mikcandy.tumblr.com/post/175669532735/tree-climber-dinacon>

AAND FACENATURE!!! AND ALL THE OTHER FUN THINGS I COULD HELP WITH ^_^

Tree Hugger's costume for PAN communication between trees and humans. We are just starting to work on the documentations.

It's in progress. It will be published on word press as well as printed.

Article (to be published on HuffPost) and ambient coconut monitor (attaches to sunglasses)

completed 3 projects; creation of a new fiber optic textile inspired by the bio-luminescence, a piece of art with my kiddo and a wearable mesh network of 3 different wearable devices made from up-cycled beach plaid, airplane headphones, sensors and Esp8266 boards.

DiNaCon has done the opposite to me as the environment and fellow participants have given me more food for thought and insight into other dimensions of my interest, therefor it enabled me to synthesise my ideas into a more tangible concept, that is the idea of a planetary dumpling as a model for exploration, learning and general exchange of knowledge through the numerous dimensions of how we as humans relate to, and make sense of the world through, food.

DinaCrab (on Wordpress).

Preliminary fruit tree map of the island

Deployed AudioMoth to record acoustic indices on the device.

Sun Set Clock 1.0 (documentation pages pending), Maker interviews (waiting on one last approval before posting), Personal Weather Station initial prototype

<http://www.kuvataiteilijamatrikkeli.fi/en/artwork/2050>

I did not complete a project. I did research, writing, shot video for the 2019 performance TIGER.

Amphibological Research (amphibologicalresearch.com) + CrabLab

Island Take Away Sound Glasses <https://www.dinacon.org/2018/07/06/island-take-away-sound-glasses-monica-rikic/>

3 microfictions on Koh Lon

thatstrangesensation.com (finalized it after, but wrote part one there). I also filmed all the footage for a music video I'm putting together now.

Dept of Amphibological Research, Crab Lab

Imaginary Fish

i started a project to explore natural vs artificial smart environments

The Recycloom! ~ <https://www.streetcat.media/creative-tech/recycloom>

I built a lot of small projects, and I also contributed to other people's projects. The projects that I completed included:

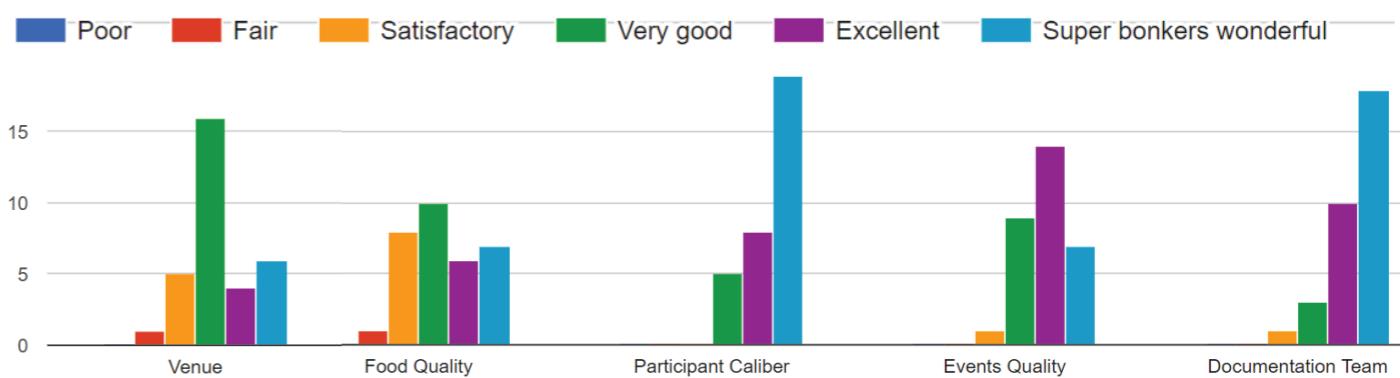
* A Canon (CHDK) camera trap. I built a few variations of this device:

- (1) triggered using an audio sound detector (works well)
- (2) triggered using a PIR motion sensor (picked up a lot of false positives and noisy).
- (3) triggered from a pressure sensitive pad made from aluminum foil (works well)

* Worked out the e-Paper display for Yannick on the Diva to display telemetry data from sensors aboard the boat.

* Neopixel Ring Compass Indicator

* Setup a wireless data logger using ESP8266 and Cayenne MyDevices - setup temperature / humidity / pressure monitor at the restaurant to monitor environmental changes as the monsoon & storm rolled in.



What was something unexpected about your time at Dinacon? (Exit Survey)

While everyone was different, they were similar in so many ways. I expected to have less in common and relate less to the other attendees since I am not as deep in the "naturalism" world as most. But I felt right at home.

I thought living arrangements would be more primitive!

How cool and open everyone was! Such good energy and the quality of humans was ✨✨✨✨.

immediate readiness to do new things

The collaboration that was fostered among participants.

It was less wilderness than expected

recognizing that creating "something" can mean a lot of different things

The deep knowledge of electronics by some many people

Our time expectations were way off coming with a toddler. We knew it would be interesting to work with [REDACTED] on this, and there are no other conferences, that we know of, that allows families to research together. That being said, we were way too ambitious with the time we needed. This, mixed in with lots of people doing lots of awesome things, often in a whim, made time a difficult resource to manage. We were not so agile, so we couldn't just drop everything and go somewhere when it was announced on Riot that something awesome would be happening in 5 minutes. We knew our limitations and capabilities, so we aren't saying this as a critique, more that there are so many cool things happening, that it becomes a time management challenge...this is a good thing!

to be honest i didn't expect people to self organize so efficiently. the self lead workshops and presentations panned out perfectly. it was really inspiring being surrounded by peoples relentless will to share knowledge and skills. and everyone go along!! so nice :))

actually having time to relax :)

also the exchange with Pom and learning about Thai superstition practices was very interesting.

Mysterious swelling from mystery insects. Pirate cats. Baan mai.

Licking ant butts, which I now miss doing on a regular basis.

Feeling open to trust, collaborate and discuss with others. At times I can be standoff-fish, nervous or just super awkward. I tend to be a coconut and not a peach and during most conferences these feelings are multiplied. Perhaps due to the nature of Dinacon or the folks included, this felt more natural, which of course would be different for a conference following a un-conference mode--but it really surprised me.

Usually I seek solitude in order to work. But for those first couple days, when it was mostly women in the living room quietly working that was pure bliss. I didn't expect to get so inspired by the energy of other people doing their work. I also didn't expect necessarily to meet other artists that I would love so much. Kathy McCleod and Microfeel are both artists whose work I continue to follow and care about a lot and I feel I will continue to do so for a long time.

Nothing really as I work on not having expectations, but I was either way nicely surprised by all above mentioned.

How great was the Andaman Diva!!!

Breaking my tent (not very surprising though)

More difficult to live on Koh Lon than expected! We were there in the early days so there were lots of kinks being worked out but it was tougher than we planned on -- we expected the heat, but not as much the humidity, low wind, mosquitos, water shortage, difficulty getting stuff to/from the mainland etc.

It's all good and all part of the whole experience, but definitely unexpected.

I'd forgotten how long had gone since I'd had a whole week with no scheduled time.

I licked the ass of an ant. And the Maker interviews project was conceived on-island--a project I didn't know I'd be doing until I got there.

Beauty of the island

Coconuts, monitor lizards, cats, how warm the ocean was, the Diva, the amazing food

The freedom!

How participative and focus everyone was (it's a very good thing)

actually learning how to make a microbial fuel cell battery

i brought a lot of stuff without testing it first which was not so smart. i thought more of it would work!

Getting to spend time on the makerspace ship!

All of dinacon was wonderfully unexpected! I've never spent time out in the field with biologists. I think the night walks with Magdalena and the hikes with Catharina into the jungle were eye-opening. The keen eye of biologists and the sheer ability to see and identify various species was really cool. I really wish there was a way to maintain connections as we've all gone back to our 'lives'.

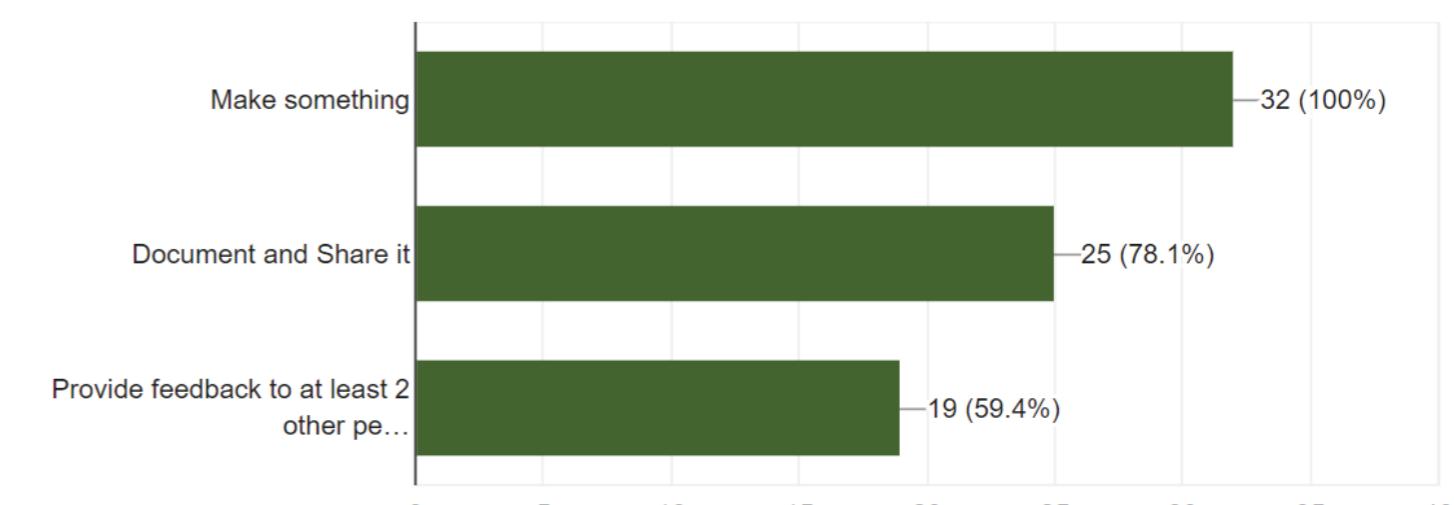
The heat was, of course, a big shock. I expected it to be hot, but it's hard to prepare for that.

The language barrier was hard. I tried to pick up as much Thai as I could, but it was so foreign to me that I had a hard time communicating with locals.

experience in the jungle

Did you...

32 responses



What about Dinacon was valuable for you? (Exit Survey)

MAKING
everyone was a maker and were in constant rush of making something. also the aspect of making was not just limited to building something but as a whole process or creating something.

Being around an extremely diverse and talented group of people who were full of inspiration and good ideas

Meeting people who are different from me, and yet the same.

Being able to learn about other people's practices, project development, and how they move about industry and academia.

meeting collaborators

The community. Having a small group of people from varied backgrounds, that were all experts in different fields, was really inspiring.

IT WAS FUCKING AMAZING!!!! the people, the place, the atmosphere. one of the best experience ever

meeting people from different disciplines and background, as a result making new professional and personal contacts and having lovely conversations

The amazing people. Wow

All of it. Interesting people with engaging life stories and projects, good organisation, inspiring location gave me enough food for thought and action to keep me going till next year.

remoteness, spirit of adventure, immersion in nature most of the time YET WITH valued A/C in cabin, range of life stages/ages/experience represented by participants

The people in it!!!!

meeting all of the awesome people! hacking stuff on an island!

The encouraging nature of the organizers and the freedom to explore making things with the tools available at the camps.

The community and the people were the most memorable and valuable aspect for me. I was excited to get to work each day and see what everyone was working on. The combination of art-minded, science-minded, and engineering-minded people brought together projects and ideas that I think would normally not come about.

the nature, the freedom doing anything, the people i met, some good conversations, intense time, weird moments,

The open-ended time being in this tropical place, seeing all the different projects and the people from all over the world.

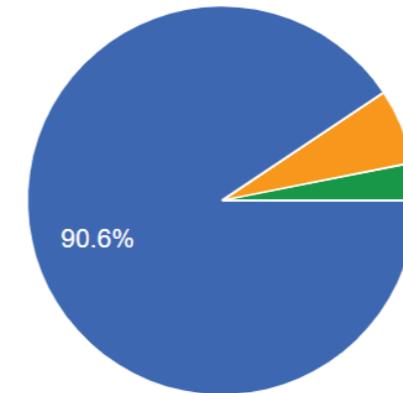
The wide range of people backgrounds

Gathering together with amazing people (literally genius) from all over the world

being completely immersed in the natural environment (although I did appreciate my air-conditioned cabin at night), being able to alternate between more and less formal interactions with other humans, who were mostly a fascinating combination of both artists and scientists... as well as time alone without stigma

Are you interested in Dinacon 2562?

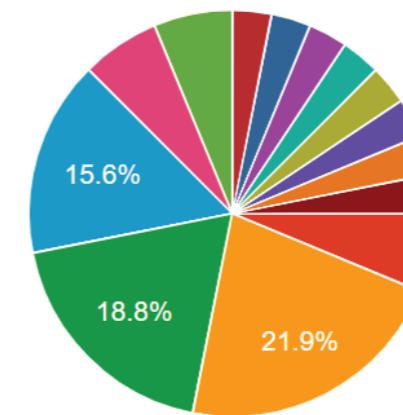
32 responses



- Hell yeah!
- Nah
- Maybe
- But I'm not sure I'll have time to participate

If we have a registration fee in the future, how much would you be willing to pay for a future dinacon's registration? (prices in USD)

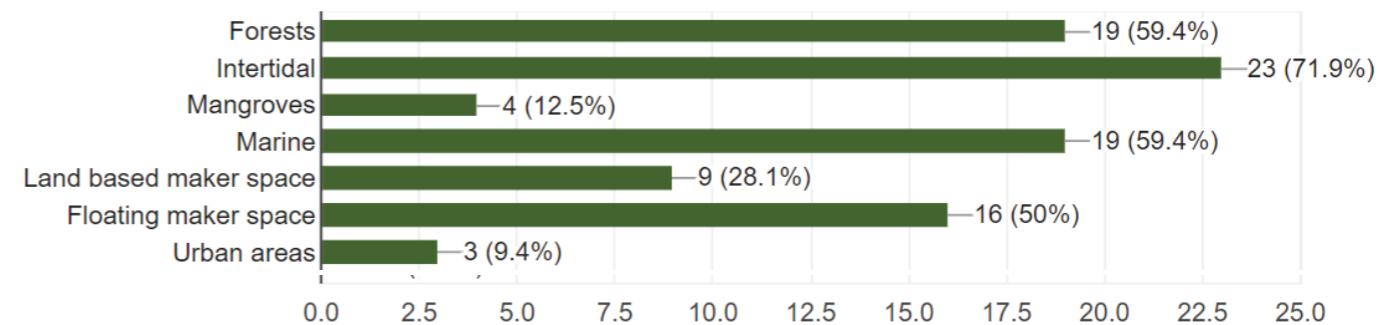
32 responses



- \$0
- \$10
- \$50
- \$100
- \$150
- \$200
- \$250
- \$300

▲ 1/2 ▼

What ecosystems inspired you most?



GLOW

by Kathy Macleod

Kathy Macleod shares an extra segment about endings, and the endless effort to preserve good feelings and energies from fascinating new experiences.



waking up every day
to create,



in the evenings,
flipping through
what I'd drawn
that day,



going to bed
every night
full of trust
that I was
on the
right
track,



after all this
I started to
notice, towards
the end, a glow
about me





when I examined
it I found out it
was that elusive
self-acceptance
glow - solid and
warm and obvious



Something about this
environment seemed
to have brought out
my best self



a feeling of being
right where I needed
to be.

And I know some
would say you're always
right where you
need to be -









Marey Insect Strobe-Series
(1864)



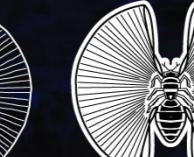
Auto-Outline
(2012)



Prototype
(2012)



Working Logo
(2013)



Official
Refined Logo
(2015)



ABOUT THE LOGO

The Digital Naturalism Logo is a stylized version of one of Etienne Jules Marey's diagrams of the wing movement behavior of a bee. Marey developed novel techniques for simultaneously extracting and sharing information from the animal world, and helped give birth to the new medium of film. His tools (sensors, triggers, and temporal photography) promoted strange new ways of encountering the world.

Digital Naturalism strives to promote this style of research in the era of new behavioral tools to view ethology as a new medium of expression.



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